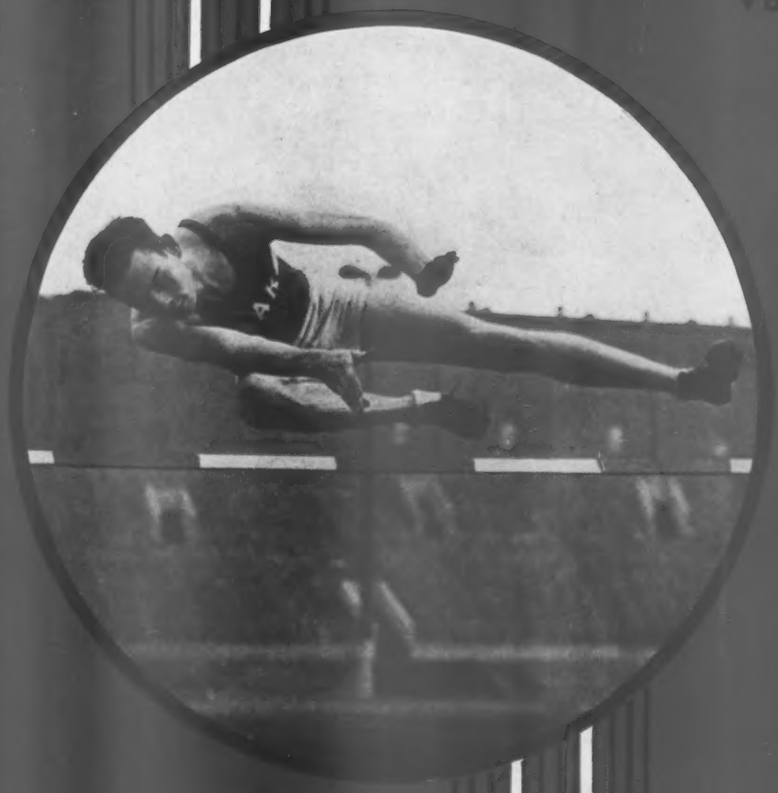
ATHLETIC JOURNAL

Vol. XVII, No. 9 May, 1937



Working with High Jumpers

Lawrence N. Snyder

The Development and Training of Broad Jumpers

Dr. Garfield W. Weede

Teaching Batting and Bunting

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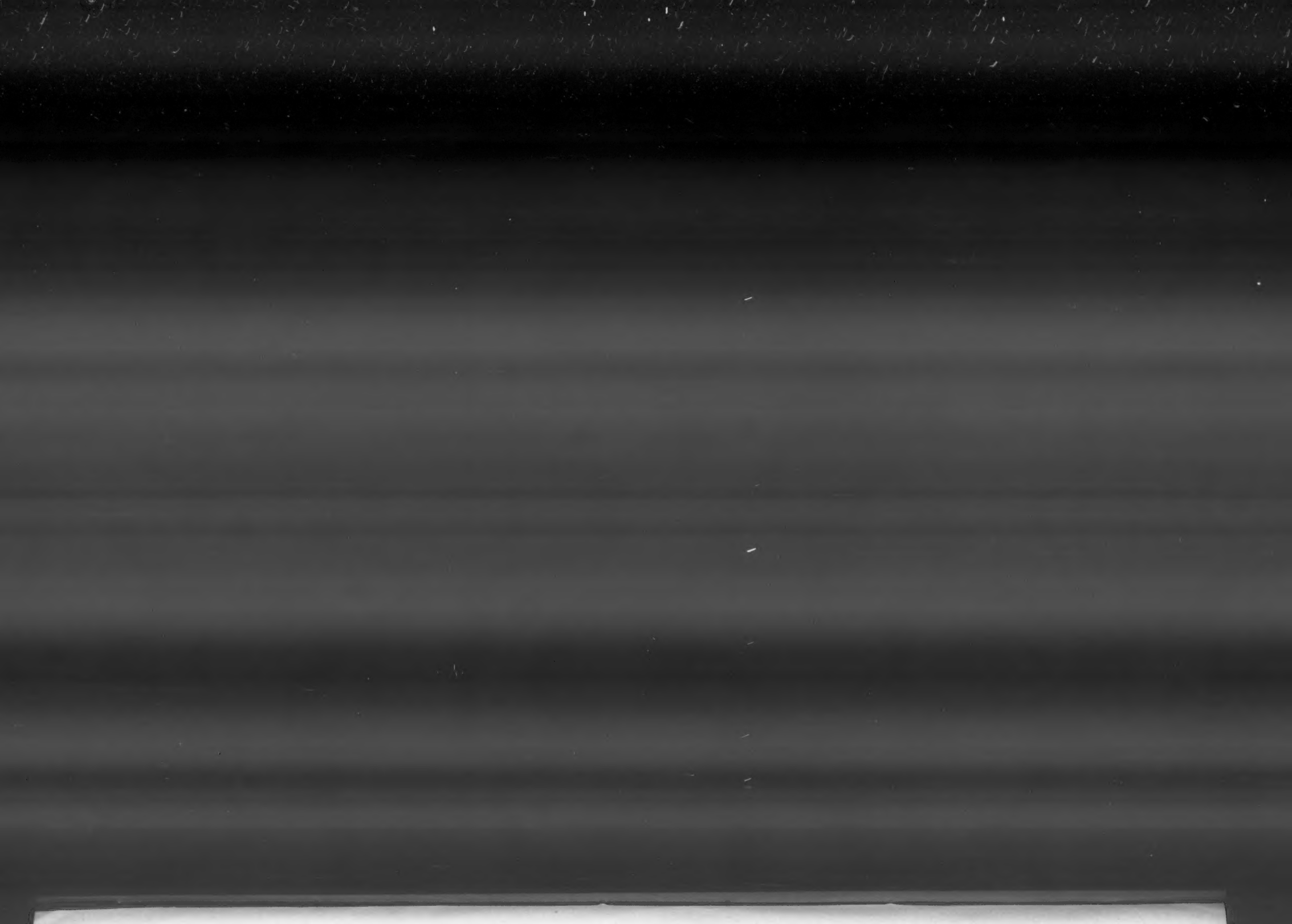

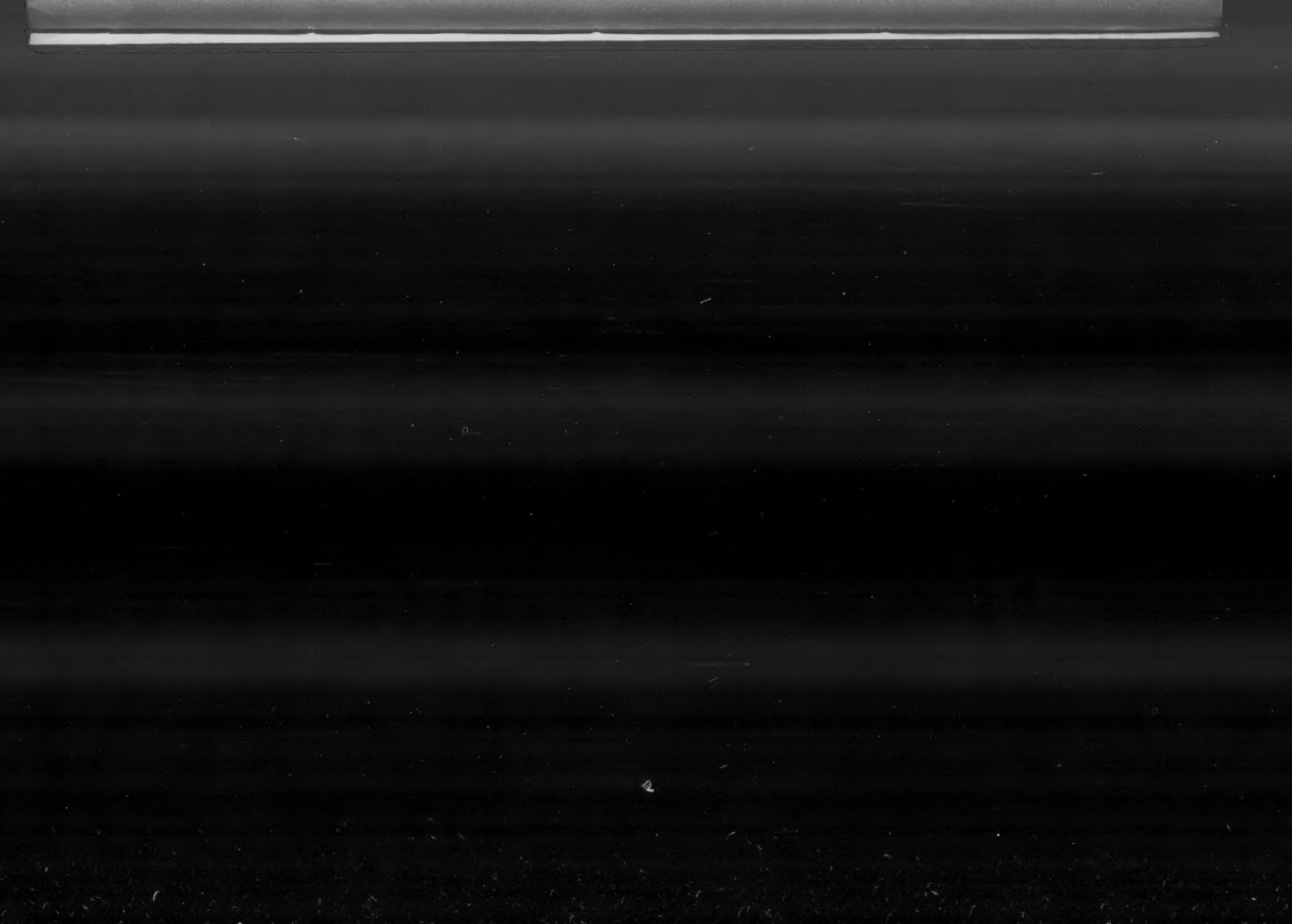

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VOLUME XVII

The ATHLETIC JOURNAL

NUMBER 9

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FOR THE JUNE ISSUE. Subscribers whose mailing address on June first will be different from that at present should notify this publication of the new address, giving the old address and stating whether the new address is for the June issue only or for subsequent issues as well.

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Burt Ingwersen, outstanding line coach and former head coach at the University of Iowa, rounds out the "football faculty" of the school. These three coaches will give you the information you have been looking for in all phases of the game.

Doug Mills who led Illinois to a co-championship in the Big Ten basketball race this year in his first year as head coach will join with Dutch Lonborg of Northwestern in giving the basketball course. Lonborg's teams at Northwestern have been formidable contenders for the past 10 years. These two coaches will go into all phases of the game, placing particular stress on the changes involved by elimination of the center jump.

Instruction in seven other fields of coaching will be given by members of Northwestern University's athletic staff. They are: K. L. Wilson, athletic administration; Tom Robinson, swimming; Frank Hill, track; Ted Payseur, golf; Paul Bennett, tennis; Carl Erickson, training, and Ade Schumacher, intramural sports.

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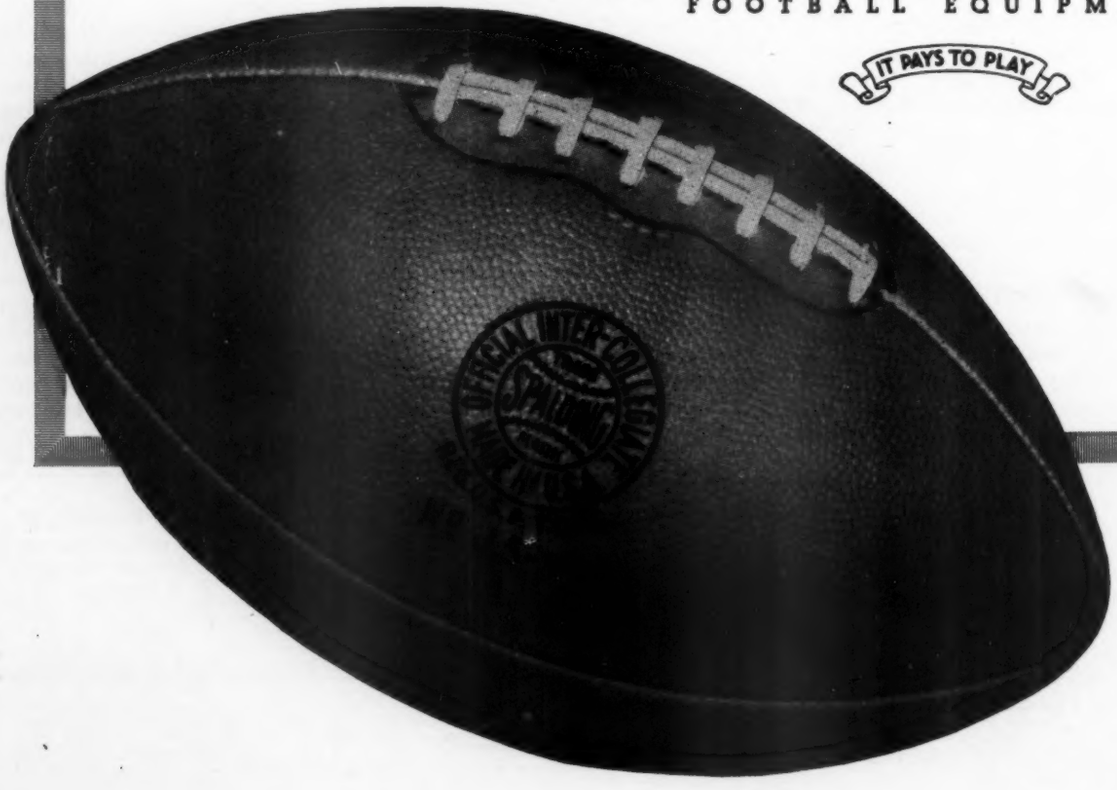


The Development and Training of Broad Jumpers

By Garfield W. Weede

Kansas State Teachers College, Pittsburg

GRADUATING from the University of Pennsylvania in 1906, Dr. Garfield W. Weede began his coaching career in Kansas colleges. He was at Sterling College for nine years and Washburn College for four years. For the past eighteen years he has been at the Kansas State Teachers College of Pittsburg, where he is at the present time Athletic Director and Track Coach. Track teams coached by Dr. Weede have been champions of their conference for the past ten years. Pittsburg relay teams have always been contenders in their class in the Mid-Western indoor and outdoor relays.

Jesse Owens, Ohio State University, is shown near the completion of his flight in the air, extending both feet well ahead of the body for placement in the pit. Note that his feet are relatively close together, the centre of gravity is well placed and his arms, which have gone above his head at the start of the jump, are now ready for a decided throw back. Best 1936 distance, 26 feet 5.3 inches, in winning the event at the Olympics.

BROAD jumping, like most of the other field events, is a specialty and calls for special as well as general abilities in the athlete who is to attain exceptional performances.

The points a coach should emphasize in working with broad jumpers will therefore vary with the native ability of each athlete. The coach in a small high school, nine out of ten times, will have a boy with only mediocre ability with which to work, and his procedure in the development of the maximum performance of this lad will be different than the methods to be followed by some college or university coach who is fortunate enough to have an athlete with exceptional native abilities conducive to excellent broad jumping. The former will have to content himself with a mediocre performance by his athlete, around twenty-one or twenty-two feet, or even less, whereas the latter should expect regular performances of between twenty-three and twenty-five feet.

Native Ability

Coaches in many schools and colleges have men as candidates who are possessed of average talents. Such coaches should, I believe, make a study of the methods used by the best broad jumpers and adjust these methods to their individual candidates in order to gain the best performance of each commensurate with his native qualifications. Methods will differ in individual performers and through the years as better jumpers are developed.

Attainment of ability to jump consistently farther than twenty-three feet requires in the jumper more than an ordinary combination of native speed and spring and, in addition, the development of a regular, rhythmic stride to the take-off. Mediocrity in any one of the above prerequisites will keep the performance near this mark; near perfection in all three should result in jumps approaching the record in this event.

Down the Runway

The native speed of a man who can run the 100-yard dash in ten seconds or less may alone carry his body weight twenty-three feet without the development of any great height or a perfect take-off, but when this same speed can be linked with an unusual spring (second only to that of a great high jumper) then one may expect an additional foot or so in performance. These two talents, accompanied by a perfected stride and take-off, will in a few cases bring the honor roll for an athlete and on rare occasions a record jump.

The perfected stride to which I refer above has to do with the jumper's passage down the runway preceding the jump. On the runway, there should be complete assurance that there will be no need for either a stuttering in the jumper's run or a lengthening of his stride in the last six steps in order to hit the board accurately with his body weight correctly balanced over his take-off foot. Faulty body balance at the take-off, or a shortening or overreaching during the last few steps, makes the difference between an excellent take-off and a fair one, and often adds or subtracts a foot from the performance of the best athletes in this event. The same speed and height may be used on successive trial jumps, but if, in one jump, faulty stride or balance develops, the jumper will lack a foot of the distance he makes in his trials in which stride and balance are just right. Early season performances especially reveal effects of inconsistency in stride and balance, but practice can and does minimize the chances for irregularity.

The coach who has a candidate with native speed should work with the athlete to develop his height and take-off. The coach with an athlete getting height naturally must work to develop his speed and take-off. The coach who is fortunate enough to have both speed and spring in an athlete can spend more time on finer points which seldom enter into his coaching of the athlete devoid of one or the other or both.

Check Marks

The good broad jumper uses one or more definite check marks on the runway —the last of which points is usually six or seven strides away from the take-off. If he hits these correctly, they will bring him to a properly balanced take-off posi-

(Left)

Kermit King, Kansas State Teachers College of Pittsburg, is pictured just as he has left the take-off board. His front knee is ready to come up higher as his arms, now high above his head, swing on around. The body will continue in this upright position until just before alighting, when the legs will be flexed upward and forward to be planted well forward and slightly apart in the pit. Best 1936 distance, 25 feet 5 inches, in placing second in the National A.A.U. Meet.

(Right)

George Meagher, University of Notre Dame, is shown in an "air-running" stride during his flight. His arms are trailing after having been raised at the start and rotated around to this position. Best 1936 distance, 24 feet 8 inches, in a dual meet.

(Left)

The illustration of George Boone, University of Southern California, pictures the jumper just after the take-off. Boone is bringing up his rear foot. He shows fine balance of the body. Best 1936 distance, 24 feet 10 inches, in taking first place in the Pacific Coast Conference Meet.

(Right)

In the illustration of Donald Skinner of the University of Southern California, the jumper's arms are high above his head to aid in gaining height. Best 1936 distance, 24 feet 5⅞ inches, in placing second in the Pacific Coast Conference Meet.

(Left)

Clark Crane of the University of Southern California is illustrated at the top of his flight. His arms are well extended; his feet are perhaps too far apart. He has good body balance. Best 1936 distance, 24 feet 2½ inches, in placing fifth at the National Collegiate Meet.

(Right)

Lorin Benke, Washington State College, jumper and hurdler, having taken off on his left foot, is in the act of bringing it up to his right knee, which has first gone high in the air. At the same time, he has swung his arms upward. Best 1936 distance, 24 feet 8 inches, in a dual meet.

tion. Some jumpers use two or three check marks with six strides between each. A few of the best jumpers use only one check mark—that at the start of the runway—but this procedure demands an extraordinarily rhythmic run to assure a practically perfect take-off, and very few jumpers can depend on it. The advantage of this single check mark, they claim, is a greater concentration on the take-off and no hesitancy caused by watching the intermediate check marks.

Weather conditions, direction of the wind, materials in the construction of the runway and other factors developing on the day of the meet will make necessary a shifting forward or backward of these

(Continued on page 34)

Working With High Jumpers

By Lawrence N. Snyder
Ohio State University

WHEN Harold Osborne of the University of Illinois set a new high jump mark of 6 feet 8¼ inches in 1924, he was so far ahead of the other high jumpers of his generation that the record held until 1933. That year, Walter Marty of Fresno State College jumped 6 feet 8⅝ inches to lead a new generation of high jumpers. The following year, Marty raised his mark to 6 feet 9 1/16 inches and then to 6 feet 9¼ inches.

At Randalls Island during the final 1936 Olympic tryouts, David Albritton, Ohio State University sophomore, and Cornelius Johnson, formerly of Compton Junior College, set a new mark of 6 feet 9¾ inches. On March 20, 1937, at the Butler Relays, Melvin Walker, Ohio State University senior, leaped into a triple tie for the world record with Albritton and Johnson as he set a new indoor mark of 6 feet 9¾ inches.

Johnson has slipped back a bit during the present indoor season, but Burke of Marquette University, Byrne of Manhattan University, Thurber of the University of Southern California, Cruter of the University of Colorado, Threadgill of Temple University, Philson of Drake University, Vickery of the University of Texas and several others might at any time leap into the spotlight with a new world mark. Apparently the seven foot jump is near.

Jumping Styles

It is impossible to give a clear picture in writing of the styles used by Walker and Albritton. Both use modified versions of the Western roll. Walker, a graduate of Toledo's Scott High School, entered Ohio State as a scissors jumper with a mark of 6 feet 3¾ inches. Albritton, with a record of 6 feet 4 inches to his credit, made while at East Tech, Cleveland, was already proficient in the Horine style (stomach to the bar).

It was not until the end of his sophomore year that Walker felt confident enough of his ability in the roll jump to use it in competition. In the Southern California dual meet at Los Angeles, after two years of practice, he took a couple of warm-up leaps with the roll. He did so well in it that he continued to use it in competition, clearing 6 feet 5 inches—the first time he had ever reached that height. He sprained his ankle that day and could not get over the bar at six feet in the National Collegiate Athletic Association Meet at Berkeley the following week. He has used the roll jump ever since.

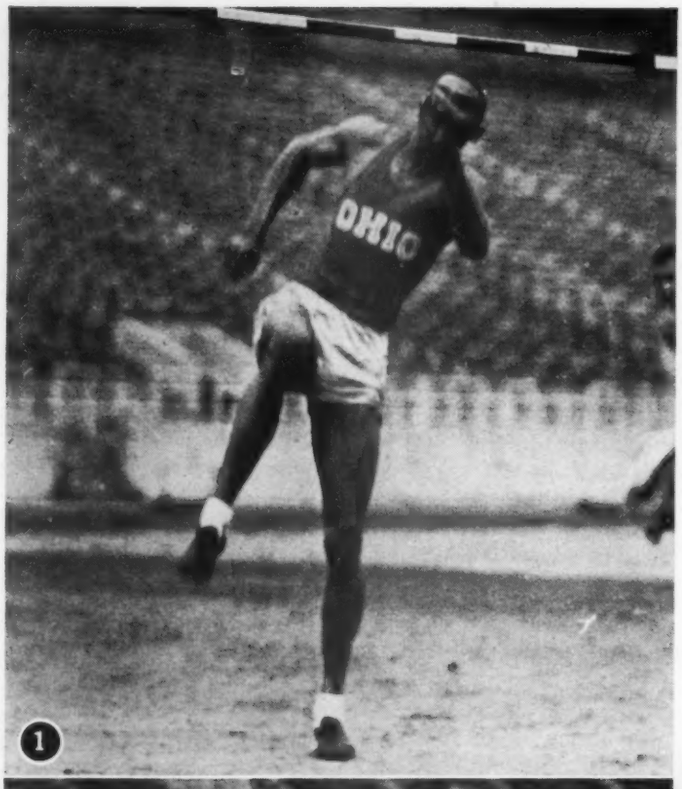
These two boys, Albritton and Walker, have very little in common when their jumping style is compared except that they both take off with the left foot. Albritton comes in fast from a 45 degree angle. Walker almost walks up to the bar from a 30 degree angle. Albritton leaps; Walker swings up over the bar. Albritton, because of his speed, carries his top height almost a foot. Walker swings up, turns and slides down the other side of the bar, having a practically perfect peak in every jump. Strangely, it is Walker with his slow, measured take-off who has the greater trouble in getting in close to the bar with his jumping foot. Albritton, to date, has not learned to use a measured run. We worked for weeks on this last year, and Albritton could not clear six feet when running into the bar smoothly. After a dozen attempts with measured stride, and a dozen failures to clear the bar, he would come back, start to run, cut his stride with choppy steps and then leap easily over the bar. Some of this work with the measured run had its effect, however, for in the final big meets in this country last season he approached the bar much more smoothly than he had formerly. At the Olympic Games he had lost the smooth approach and has not yet found it again.

The Stimulus of Competition

I once thought that Walker would be the first of the two jumpers to break the world record. But I had not given proper weight to the competitive nature of Albritton. The latter needed only the stimulus given by Johnson at Randalls Island to bring out his supreme effort—to date. Since the Island high jump facilities were not constructed to give Walker a chance to come in from his proper angle, he did not jump in form on the day of the Randalls Island meet. However, when he got his chance with everything working right at Butler University, he left no doubt in the minds of some 10,000 people that he might jump still higher than the present world record. When Walker had finished jumping at Butler, the height of the top of the bar above the standards measured 7 feet ¼ inch. That meant that about two-thirds of Walker's 6 feet 5 inches of stature had cleared the bar at 6 feet 11 inches. Only a few inches of the official bar were as low as 6 feet 9¾ inches.

Albritton has always used the powerful kick-up with his jumping (left) leg as he clears the bar, face down. The best leg action of this type, the most efficient, is a part of the form used by Burke of Marquette; probably second best is the leg action used by Threadgill of Temple. All season, in practice, Walker has been trying to add this leg action to his style. Early in the competition at Butler, he was swinging up and sliding down as of old. Then, when the bar was raised to 6 feet 10 inches, he unconsciously got a kick-up with the jumping leg as he crossed the bar. From that time until the judges and all of the officials at the meet assured him that he had leaped 6 feet 9¾ inches that kick was a part of his style. It will be there from now on every time he needs it, I hope.

FEW men have coached more world champion athletes than has Lawrence N. Snyder, Track Coach at Ohio State University. Two of the three co-holders of the present world record in the high jump are Ohio State athletes working directly under the supervision of Snyder. But Larry Snyder's coaching success is not confined to the high jump. He has at various times been represented by unusual performers in the sprints, the hurdles and the broad jump. Snyder is a graduate of Ohio State University and during his undergraduate days competed most successfully in the hurdle events. This intimate study of Snyder's work with two world record holding high jumpers reveals the way in which an outstanding coach works with outstanding athletes. The illustrations which accompany this article are of high jumpers who were placed on the 1936 Collegiate Honor Roll.



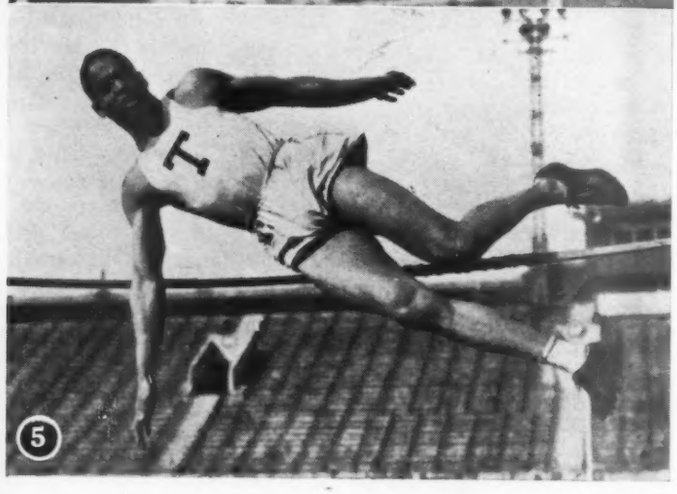


Illustration 1—David Albritton of Ohio State University. This is a typical take-off for Albritton when using either the roll or straddle style of jump. The jumper comes in fast and hits hard with his heel, but has a tendency to lean too much to his left as he springs. He does not use the lead leg to swing him up as does Melvin Walker, but depends on his spring to carry the load from this point on.

Illustration 2—Albritton again. A beautiful layout, from which point the jumper can either ride down into the pit, as most roll jumpers do, or frog kick the left leg as he rolls on to his stomach. Albritton usually kicks. He used this style at Randalls Island in his jump of 6 feet 9¾ inches.

Illustration 3—Here is the straddle jump that Albritton uses at times. A sharp kick, with both legs straightening simultaneously, gives him added impetus upward and provides the means to secure a beautiful layout.

Illustration 4—Delos Thurber, University of Southern California, using what might be termed a pure Western. From this position Thurber turns his top toe inward and downward, pivoting on his lower hip, and rides down. It is from this position that numerous adaptations may come. A fast pivot will bring the lower knee downward before it reaches the bar; then the straightening kick will bring a layout, with the jumper's face down, that enables some athletes to gain increased height. Harold Osborne stayed on his back until the leading hip crossed the bar; then, with a hard downward action of his near arm and an upward kick of his jumping leg, turned downward into the pit. Thurber, like Walker, does not have the stamina possessed by some of the shorter, well-knit jumpers.

Illustration 5—Alfred Threadgill, Temple University, has one of the most efficient and most beautiful jumps since Osborne. At top heights, he is flat on his back, with his jumping (right) leg leading across the bar. The left leg trails well behind, the lower part at right angles to the thigh, until his body is a few inches in front of the bar. Then he "kips," kicking the trailing leg straight just as it crosses the bar. In this illustration, he is jumping at a low height and is already headed downward.

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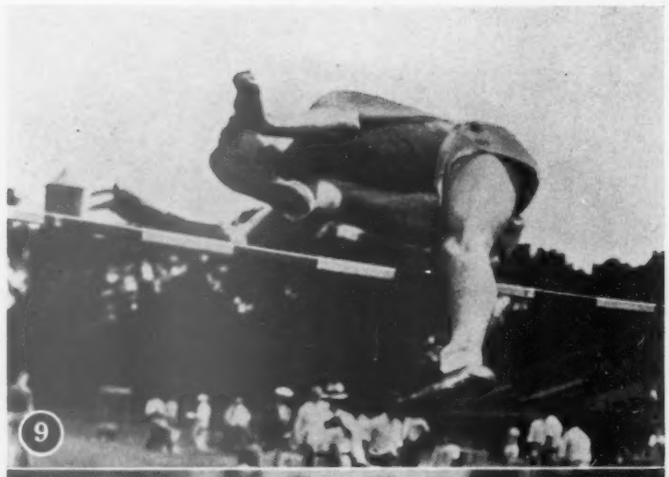

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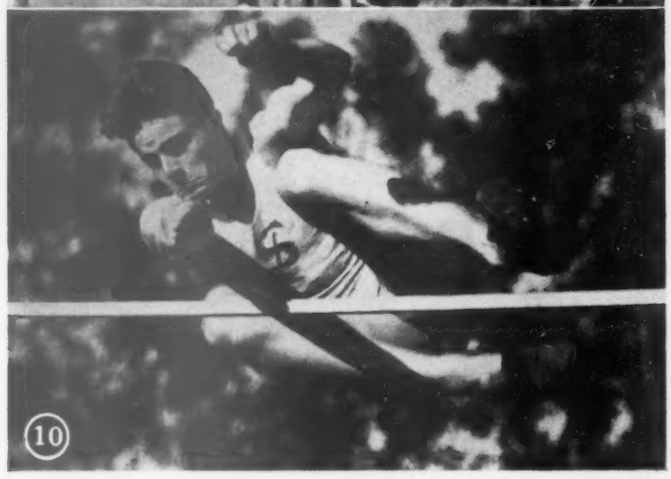

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Illustration 6—Melvin Walker, Ohio State University. This picture shows the powerful swinging right leg and splendid use of the arms at the take-off. As Walker's very slow approach brings him into the bar, his take-off foot cuts across in front of his right foot in his last stride. His jumping foot is at right angles to the bar when he leaves the ground.

Illustration 7—Here Walker is demonstrating the roll jump which he used as a sophomore and junior, clearing 6 feet 8 inches several times. He is turning at the top of the jump and preparing to slide down on the far side.

Illustration 8—Walker again. Convinced that he can straddle the bar at seven feet, Walker has been working on this style of jump. His right leg swings straight up as in his former style, but the jumping leg is delayed, bent and then straightened with a frog kick that gives him additional height. This is the form used in his 6 foot 9¾ inch jump.

Illustration 9—Linn Philson, Drake University. Here is a fine example of the Eastern style jump. Philson jumped 6 feet 7 inches using this style. The body is forward along the thigh of the jumping leg, which is cutting across and upward. Both elbows are extended from the body to assist in turning the torso and to rotate the top hip inward and downward, thus forcing the top leg upward and enabling the lower leg to cut on through. Byrne of Manhattan University uses this style. He was consistent at 6 feet 7 inches indoors last winter.

Illustration 10—Humbert Smith of Stanford University using what might be called a "gather" adaptation of the Western roll. This position is held until the jumping (lower) foot reaches the top of the bar; then the legs are extended so that the legs and body, hip down, are parallel with the bar as the height is cleared. Both arms are in position to assist in the turn which will enable the jumper to land lightly.

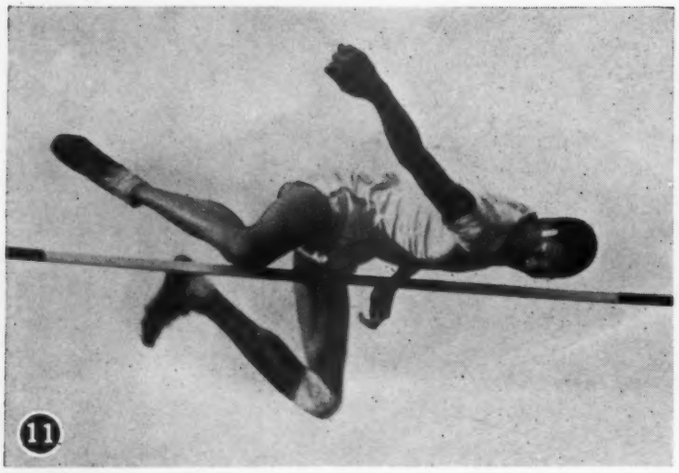


Illustration 11—Gilbert Cruter, University of Colorado, is using the straddle version of the Western. He demonstrates a good layout. From this point the jumper has two options. He may continue the straddle, rotating around the bar, or, with the frog kick, attempt to gain additional altitude. Both legs, or the trailing leg only, may be kicked.

Illustration 12—Tom Stephens of Kansas State Teachers College, Pittsburg, is shown rolling away from the bar. He apparently had attained a good layout above the bar and is using his arms and top leg for the recovery. Stephens' best jump of 1936 was 6 feet 5 inches, when he tied for first place at the Drake Relays. He is credited with two other jumps of over 6 feet 3 inches during 1936.

The Evolution of the Hurdle

By Harry Hillman
Dartmouth College

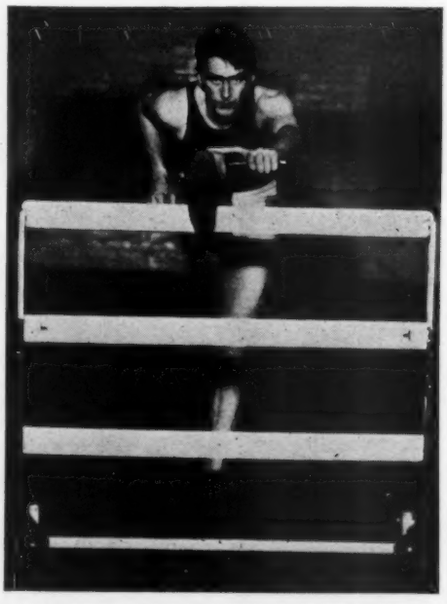
WINNER of two Olympic hurdle events in 1904, Harry Hillman has been a close student of hurdling for over thirty-five years. This article is therefore of more than momentary historical interest. For the past twenty-eight years, Mr. Hillman has coached track and field teams at Dartmouth College.

THE construction of the hurdle has been very much improved in recent years. It was not an uncommon thing in the '90's to see hurdle races run under a great variety of conditions. There was then no official hurdle. All that was ordinarily uniform was the height of the obstacle, and in many instances the height varied.

In and around New York in those days, seldom was a hurdle race, longer than 120 yards, run straightaway. The majority of races were run around a turn, and usually the hurdle was a long bar set between two wooden horses that covered the whole breadth of the track. This style of race was a difficult one, as the athlete leading the field had a decided advantage and was about the only competitor who ran the correct distance. Many a championship race was run with this one long hurdle. Incidentally, the race was usually decided at the first hurdle on the turn, as the leading hurdler at this stage of the race held the pole, and to pass the leader it was necessary to go around the outside of him, which meant more than the required distance between hurdles.

Early History

In the Military Tournament, held in the old Madison Square Garden in New York City, years ago, the same hurdle was used for the athletes as was used by the army horses in their exhibitions. This hurdle was a heavy pole placed across the track. If hit by the jumper, it did no small amount of damage to his shins. At this tournament, the running of a 220-yard low hurdle race on a twelve-lap tanbark track resulted in plenty of hustling on the part of the competitors to reach the first hurdle and some speed on the part of the workmen to shift the hurdles from one place to another. If the workmen were lucky, they got the hurdles changed before the runners came around the second lap, and usually the hurdles were a few yards out of place. The competitors in those days could expect almost anything.



Chapman, a Dartmouth College hurdler of several years ago, at practice. He is using the L type steel hurdle with weights.

Even as late as 1908, in the final try-outs for the United States Olympic team that were held at Franklin Field, Philadelphia, each of the hurdles for the 400-meter event consisted of one long plank covering the width of the track. As the uprights were sunk a foot or two in the ground, it meant "curtains" for any of the boys to bang into a hurdle. Consequently, the race developed into a series of high and broad jumps, rather than a hurdle race, as no athlete was willing to be annihilated.

Later on at Travers Island, New York, in the 220-yard hurdles race around a fifth of a mile track, the hurdles were finally staggered, but as all were painted white it was almost impossible for the athlete when going at full speed to differentiate between the lanes, and many times an athlete would find one of his competitors running in front of him in his lane. The only way the man behind could possibly pass the leader was to jump to another lane. Later, after the London Games, a meet was held at Colombes Stadium, near Paris, in which the French had painted in a different color the top bar of the hurdles in each lane; so all each competitor had to do was to follow his color. This idea was later adopted in the United States and finally in the 400-meter

hurdle race as now run in the Olympic Games.

The T Type Hurdle

Most individual hurdles until a few years ago were of many shapes and weights, and each had a base which when viewed from the side made the hurdle look like an inverted T. These hurdles were never satisfactory, although a big improvement over the cavalry hurdles used before. The trouble with the T base lay in the rise of the top bar when the hurdle was overturned. Many hurdlers were tripped after they had hit the hurdle with the rear knee. By the time the rear ankle got to the hurdle, the top bar was about 3 feet 8 inches above the track instead of the official 3 feet 6 inches. Also, the overturning force was different at different heights, which made the lower heights more difficult, inasmuch as more force was required to knock over the low hurdles than the high ones.

Some hurdles had long bases, some short. Some hurdles weighed 25 to 35 pounds and others 15 to 20 pounds. Some were so light that a hurdler could run right through them, while others were very heavy and the boys were seriously damaged if they hit such a hurdle when going at full speed. The rules of competition at that time stated that an athlete knocking over three hurdles was disqualified; knocking over one or more hurdles deprived an athlete of a record performance.

In a hurdle weighing 25 pounds with the old T type base of 26 inches, the rise in falling and the overturning force at different heights are as shown in Table I.

The problem was to eliminate the rise in falling and equalize the overturning force; so another type of hurdle was tried. In this type, the uprights were placed two-thirds of the way from the front on the same 26-inch base. This did not eliminate the rise in falling, but it did reduce the rise and also the overturning force. Although there was an effort to reduce the overturning force, the idea was first to eliminate the rise of the hurdle in falling. This type of hurdle reduced the rise as shown in Table II.

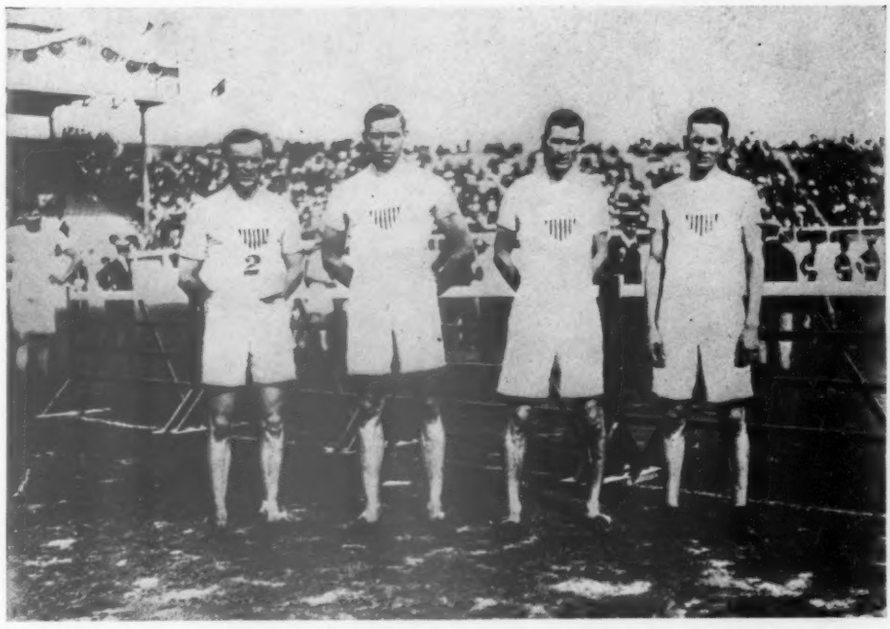
The L Type Hurdle

These experiments were made by Professor Frank E. Austin, mechanical and civil engineer, formerly of the Dartmouth College faculty, together with the writer. After several more years of experimenting, the idea of trying an L type hurdle was conceived. The hurdle was designed and experimented with. This L type hurdle entirely eliminated the rise in falling, but at the time it did not seem practical, as the base would have to be thoroughly reinforced in order to stand up under usage. However a metal base was tried and found to be very strong. Later, the uprights were made of light metal with a sliding metal bar inside the uprights on which the wooden crossbars were attached; this arrangement seemed feasible. However, the overturning force had to be corrected. After a series of mechanical experiments, weights were attached to the base, so that, with the weight on each base in a certain position, the overturning force for the 3-foot 6-inch height was eight pounds. With one weight pointing toward the front and the other toward the rear, the overturning force for the 3-foot height was likewise eight pounds and, with both of the weights to the front, the overturning force for the 2-foot 6-inch hurdle was also eight pounds.

This design was finally accepted as the official hurdle and is now in use all over the world. The International Federation of Amateur Athletics, which controls and regulates the Olympic Games, has accepted this type of hurdle, which was used in Olympic competition last summer.

This design seems to meet the requirements. However, the writer suggested before the hurdle was finally adopted that the overturning requirements be five to six pounds instead of eight pounds. The authorities, however, thought that the hurdler should be penalized for hitting a hurdle, and he surely is. I doubt if a hurdler gains any advantage in knocking over a hurdle.

The rules now state that with the present type hurdle a competitor can win a race regardless of how many hurdles he knocks over. Only recently it was decided that a hurdler could establish a record regardless of how many hurdles were knocked over. It seems to be the consensus among track coaches that the overturning force should be five or six pounds instead of eight pounds and that a hurdler should be allowed to win a race should he knock down three or more hurdles, but they do not believe an athlete should get credit for a record should he knock down even one hurdle.



Finalists in the 110-meter hurdle event at the 1908 Olympics, held in London. Left to right, the hurdlers are Smithson of Portland, Oregon, the winner; Garrels of the University of Michigan, second; Shaw of Dartmouth College, third; and Rand of Harvard University, fourth. Note the very light hurdle, as well as the turf on which the event was held.

Harry Hillman

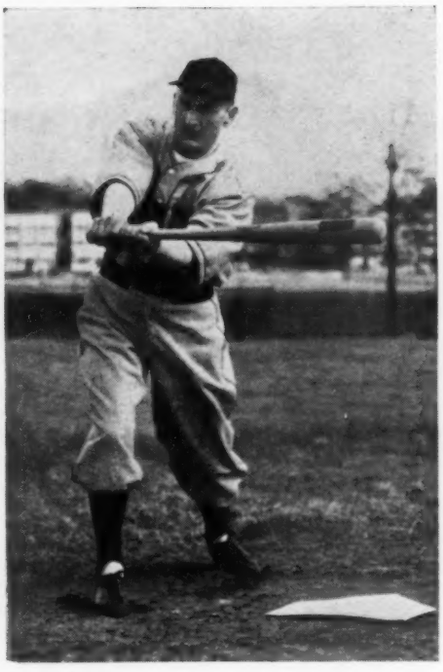
TABLE I

Height of hurdle	Rise in overturning	Force at top bar necessary to overturn
2 feet	3.29 inches	13.54 pounds
2 feet 6 inches	2.69 inches	10.83 pounds
3 feet	2.26 inches	9.02 pounds
3 feet 6 inches	1.96 inches	7.73 pounds

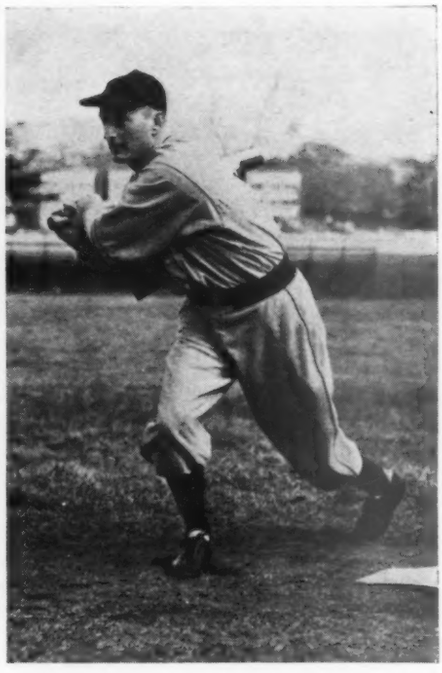
TABLE II

Height of hurdle	Rise of improved hurdle in overturning	Rise of old hurdle in overturning
2 feet 6 inches	1.22 inches	2.69 inches
3 feet	1.01 inches	2.26 inches
3 feet 6 inches	.88 inches	1.96 inches

Position of the batter ready for the pitch. Notice the position of the feet, about eighteen inches apart. The arms are well out in front, the shoulders are even and the weight of the player is on the balls of his feet. The rear leg, which is used for driving power, is almost straight.



Meeting the ball. The ball should be met well out in front. Notice that in this picture the batter's arms and wrists are out in front and ready for contact of the ball and the bat. The grip shown is that used by free swinging hitters; the hands are close together at the end of the bat.



Follow-through and position of the feet as the player starts for first base after hitting the ball. Notice that a pivot is made with the right foot and a cross-over with the left. The player has his weight well distributed. He is balanced and ready for the break to first base.

Teaching Batting and Bunting

By Daniel E. Jessee
Trinity College

THE most important piece of equipment in baseball is the bat. Many of us teach batting without giving much thought to this particular item. An interesting study has been made in regard to the length and weight of bats used in the two major leagues. A survey of 217 models used by as many different major league players disclosed that 56 per cent were 35-inch bats, 26 per cent were 34-inch bats, 12 per cent were 36-inch bats, while 6 per cent were 33-inch bats.

Most of the leading sluggers in baseball use bats that are 35 inches in length or shorter. Among these players are the following: Joe Cronin, Jimmie Foxx, Lou Gehrig, Billie Herman, Rogers Hornsby, Chuck Klein, Mickey Medwick, Joe Moore, Bill Terry, Arky Vaughn and Paul Waner. Mickey Cochrane, manager of the Detroit Tigers, uses a 34½-inch bat, and Mel Ott, champion home run hitter of the National League, swings a 34-inch bat.

The Balanced Bat

There is an excellent reason why school and college players should adopt bats of 35 inches and less. Those who insist on long, light bats overlook the important factor of balance. They think they can swing a long, light bat faster than a short, relatively heavy bat and thereby get more punch into their drives. The reverse is true. They sacrifice punch when they insist on using the greater lengths. They overlook the fact that a correctly balanced bat can be swung faster and with more punch than an incorrectly balanced bat. Correct balance in a bat has nothing to do with its over-all weight; swinging or leverage weight is the controlling factor. For example, a 36-inch bat weighing only 34 ounces may have a heavier swinging weight than a 34-inch bat weighing 36 ounces.

At the present time, Daniel E. Jesse coaches both baseball and football at Trinity College in Connecticut, where he has had marked success. After graduating from Pacific University in 1926, he played professional baseball. Previous to assuming his present position, he coached at Chimacum, Washington, High School and at his Alma Mater. He holds a master's degree from Columbia University. An article by Coach Jesse on the play of infielders, especially the shortstop, appeared in the April, 1936, issue of this publication.

Most bats used by major league players are designed to have the best balance at a certain length. A bat that originally was designed for a 34-inch length cannot be expected to have the same nice balance when it is made 36 inches long. Stretching a bat that originally was made 34 or 35 inches long to 36 inches destroys its balance and decreases the speed of a player's swing and his accuracy.

Major league players insist on bats of driving power and balance. They have found by experience that these two factors can be had only if the bats are of solid timber and therefore better than average weight. They know that long, light bats lack in driving power, have not the correct balance or swinging weight and hence prevent a fast swing with accuracy. Their choice runs to shorter lengths and more compact and solid timber, which means reasonable weights.

Batting Practice

Batting requires a great deal of natural ability, boundless patience and endless practice. Pitchers who have good control should be used in batting practice, and usually no effort should be made to baffle the batter. There is not the alertness in

Ready for the bunt. Notice the position of the player's hands, feet, arms and body.

practice that there is in a game. Crossing up the batter often leads to bad batting habits and discouragement.

Batting practice should be made as game-like as possible. A catcher should be used in practice as this helps the pitcher's control, steadies the batter and in general speeds up practice and makes it more enjoyable. Balls and strikes should be called. This tends to improve the batter's judgment and create a game atmosphere.

The hitter should not bat too long at a time. He should hit three or five balls and then go back to his position and think over the faults he may have. Hitting too many balls often makes a batter careless. He should look for good balls; the bad ones will take care of themselves. He should get the range and force the pitcher to throw the ball over the plate. He should try to hit the ball on a line through the infield; not hit for the fence, but hit naturally and straight-away.

The batter should not guess what the pitcher intends to throw but should watch the ball and be governed by the twist and spin. The habit of guess hitting often leads to a player being hit by a pitched ball. If the player is a guess hitter, he should expect only a fast ball. A curve ball comes much more slowly than a fast ball, and the probability of being able to get out of the way of a fast ball is not so great. If a curve ball is guessed and a fast one is thrown, the batter may find himself glued in his tracks.

Position at the Plate

Strength and weakness are often determined by the position a batter assumes at the plate. Pitchers throw according to the position of the batter, particularly the position of his arms and feet. Batters often vary their position at the plate according to the individual pitcher they happen to be facing. It has been found effective at times for the batter to move toward the pitcher on slow balls and teasing curves, provided the pitcher is weak on fast balls. Against a fast-ball pitcher, batters often move to the back of their box, allowing themselves more distance from the rubber. Position at the plate varies with the individual batter. Physical make-up, length of the bat and type of swing determine the proper position.

Batting Grip

Three distinct grips are employed in baseball. In the first, the hands are placed together at the end of the handle. This grip is used by a free swinger and a long distance hitter, such as Babe Ruth. In the second grip, the hands are placed upward from the handle of the bat. This is known as the choke grip, and is used by small men and place hitters, such as Willie Keeler. Another grip used very little, but which proved effective for the great Ty Cobb, is with the hands about six or seven inches apart. This type of grip may be used effectively for place or long distance hitting.

The bat should be held securely but not too firmly in the hands. The muscles should be loose but ought to have tone enough to meet the situation. The batter should assume a natural, relaxed position at the plate, with his arms well out in front, and should contact the ball out in front with a free, co-ordinated follow-through. A smooth wrist snap gives power to the bat; thus, a player should develop his wrists.

Stride and Timing

To step or stride into the ball requires excellent timing, as striding or stepping into the ball too fast or too slowly leaves the batter only half ready to contact the ball.

Two of the greatest faults in hitting are overstriding and not keeping the eye on the ball. A long stride is not necessary to get power into the swing. The stride should be only about six inches in length; a long stride opens many avenues for the pitcher to work on. Flat-footed hitters are very effective, especially in placing the ball. Joe Sewell, one of the hardest players to strike out, is a flat-footed hitter. The young player should try to do what is natural and effective for his own individual make-up; too many ball players try to bat like Babe Ruth, and there is only one Babe Ruth. Few can follow his style. His great eye and co-ordination made him outstanding among hitters in baseball.

Overstriding leaves the batter off balance after contact with the ball, and the first step toward first is awkward. The batter should move into the pitch and have the body going toward the direction

In the act of dragging the ball. Notice position of the hands and body.

of the ball. For instance, if the pitch is on the outside of the plate, the batter should step in that direction as the swing is made.

The batter should be ready to hit. He cannot hit with the bat on his shoulder. He should start the swing early and meet the ball well out in front of his body. If the ball is met even with or behind the center of the body, the result will probably be a feeble fly or ground ball. The batter who meets the ball out in front has the advantage of the wrist snap and the follow-through. He also has the ball within his line of vision and has more chance of contact with it.

Swing

There are many types of swings used in baseball. The most common are the rigid arm swing, the push swing and the wrist swing. The wrist swing is the most effective. It is advisable because it offers the greatest possibilities and is the most natural. The batter should shift the weight from the back leg to the forward leg when swinging, tensing the back leg for power.

The swing should describe an arc parallel with the ground. The bat should be kept away from the body, and the elbows should be kept well out in front. The bat should be carried even with the shoulder. The batter should always be prepared for strikes. The hitter should take an even, well co-ordinated swing, not seeing how hard he can swing. It is the proper timing that counts.

Eye on the Ball

Batting requires excellent co-ordination between the eye and body movements.

(Continued on page 33)

The Baseball Coach's Practice Session Talks

By H. S. DeGroat
Springfield College

IN addition to an outline of topics for practice session discussion by the baseball coach, this article contains several sample talks. These will be found especially helpful to the young coach. Many coaches will find that these sample talks may be read with profit by their players. H. S. DeGroat, the author of this article, is now in his twenty-third year of coaching and has been at Springfield College, from which he graduated, since 1927. Other articles on baseball by the same author appeared in the March and April issues of this publication.

WHAT is your tendency as a coach? Are you one of those instructors who has no trouble in addressing his squad, or are you inclined to start practice with very little time spent in talk and let the rainy day supply your period for "skull practice"?

If you have no difficulty in talking, you are probably one of those fortunate coaches who has a first class field and equipment and no distracting circumstances surrounding and embarrassing your program. If you are one who has been inclined to "start 'em hitting" and seldom bother to discuss problems with your players, you will find that you have done so because the weather is cold, or the wind is blowing, or your unfenced practice field does not keep out the group of outsiders who are always hanging around. Undoubtedly the coach who talks most regularly teaches the most baseball and has the best informed squad. It is probably to the young or inexperienced coach, who has not established his system yet, that this article may give a few helpful hints.

It seems logical to expect that if the coach follows some set plan of practice session topics he will educate his players faster and more thoroughly than if he lets these things slide over to rainy day periods and does not follow a program that covers the essentials. Have you ever had the experience of seeing a visiting team try the delayed steal of home with runners on first and third, on the Saturday after you had practiced this play and the defense against it? Were you lucky enough to have your cut-off man snare the throw from home and peg the runner out at the plate? Then, on the same afternoon, have you seen your boys try the same play and watched your runner score standing up? If so, you have felt one of the thrills of coaching.

Rod Smith, Captain of the 1936 Springfield College team; a fine infielder and a great lead-off batter.

Outline of Topics

Following is a suggested outline of topics to be used by the baseball coach in giving his team a thorough course in theory. If the nomenclature of a few topics is unfamiliar, perhaps it will be cleared up by the sample talks which are included in this article.

I. Your policy as coach.
   A. Care of equipment and uniform.
   B. Training rules.
II. Sportsmanship.
   A. Good spirit of team.
   B. Backing up the pitcher.
III. Quiz on rules.
IV. Alertness.
V. Batting—your theory of it.
   A. What you wish players to aim for in hitting practice.
   B. The batting order.
VI. The dependable batter and signals.
VII. The lead-off batter — working pitcher in hole.
VIII. Special types of batters.
   A. The cleap-up man.
   B. The pinch hitter.
IX. The bunt plays.
   A. Sacrifice.
   B. Drag hit.
X. Running the bases—the steals.
XI. Putting out runners caught between bases.
   A. The one-throw put-out of runner "in pickle."
   B. Japan style of put-out of runner "in pickle."
   C. Bluff peg by basemen or catcher.
XII. Offensive plays.
   A. Hit and run.
   B. Run and hit.
   C. Squeeze.
   D. Bunt and run.
   E. Straight-away hitting.
   F. Hitting in the hole.
   G. Delayed steal of home.
XIII. Defensive play.
   A. Shifting of infielders according to score, outs, inning, batter.
   B. Breaking up the bunt with men on first or first and second.
   C. Breaking up the hit and run plays.

(Continued on page 37)

Norman Keith, Springfield College third baseman, who had a batting average of .321 during the 1936 season.

The Basketball Rules for 1937-1938

By Oswald Tower
Editor, The Basketball Guide

***PERHAPS** no man is a closer student of the game of basketball than Oswald Tower. For years he has been a member of the National Basketball Committee and Editor of the Basketball Guide. He is also official interpreter of the rules. In this article, he discusses the principal changes made by the National Committee in the rules for the next basketball season. For official interpretations of the rules, he may be addressed at Andover, Massachusetts.*

THE abolitionists, those who fought for the elimination of the center jump in basketball, have won the long conflict. Three years ago the Pacific Coast Conference, with the approval of the National Basketball Rules Committee, began to experiment with the plan of putting the ball into play at center only at the beginning of each half and after technical or double fouls.

The idea was not new, for it had been under consideration for many years and had been tried from time to time in many parts of the country. The experiment on the Coast, however, marked the first time that the plan had been put into operation by a group of colleges in a series of important games. The enthusiastic reports and aggressive salesmanship of the coaches on the Pacific Coast broke down most of the resistance of the standpatters, with the result that at the last annual meeting of the National Committee the following groups were reported in favor of eliminating the center jump: the National Association of Basketball Coaches, seven of the eight districts of the National Collegiate Athletic Association and 60 per cent of the individuals who replied to the annual questionnaire.

The mechanics of the plan are simple enough. After a field goal, the ball is to be put into play by the team scored upon in the same manner as after a successful free throw following a personal foul. The official is not to handle the ball, and opponents are not permitted to interfere with the ball after it comes through the basket, for the purpose of delaying the subsequent play. There is a feeling on the part of some people that this method of putting the ball into play will make the game too exhausting for players, but those coaches who have tried it over a long period report that there has been no such result. At the beginning of each half and overtime period, as well as after technical and double fouls, the ball is to be tossed at center.

Blocking Interpretations

Screening and blocking will receive more attention in the new rules. A new statement will appear in the "Comments," giving in greater detail the various situations that arise in this connection, together with an attempt to fix responsibility for contact that may ensue under the conditions described. The wording of this statement, subject to minor changes, is as follows:

"A player is entitled to take any position on the court not occupied by another player, provided that (1) this position is not so close to an opponent (less than approximately three feet) that contact ensues when the opponent makes normal bodily movements, or (2) this position is not taken in the path of a moving opponent so quickly that the latter cannot avoid contact.

"In the foregoing cases, the player who takes the position described is responsible if contact ensues, unless other factors are involved.

"A player who is attempting to screen is blocking if contact occurs when he is moving and if his opponent is stationary or retreating from him. In other cases of contact resulting from an attempt to screen when both players are in motion, either or both may have committed a foul, but, in case of doubt, the greater responsibility is on the player who is attempting to screen.

Oswald Tower

"If a player disregards the ball, faces an opponent and shifts his position as the opponent shifts, such player is primarily responsible for any contact that ensues, unless other factors are involved.

"The expression 'unless other factors are involved,' in the foregoing statements, refers to deliberate pushing, charging or holding by the player who is being screened. This player must make a reasonable effort to avoid contact, and any deliberate act on his part which causes contact should be penalized."

The term "face-guarding" is eliminated, which means that a personal foul takes place only when there is personal contact. It should be noted that the foregoing applies to both offensive and defensive players and that, while we usually think of screening in terms of an offensive player, the various clauses are to apply to defensive players whenever occasion arises. Moreover, there is nothing in the foregoing to imply that at all times a player must be three feet away from his opponent.

Miscellaneous Provisions

With the increase in the number of elongated "goal tenders," it has become necessary to restrict the defensive tactics of such players. Otherwise, we should soon expect to have games in which all of the scoring is done via the free throw route. The alternative solution would be the twelve-foot basket. A new section will be added to Rule 14 as follows:

A player shall not "touch the ball with the hand, or arm, while that hand, or arm, is touching any part of the opponents' basket, or while that hand, or arm, is above the opponents' basket.

"Note—*Above the basket* as used in this section means any part of the space enclosed by an imaginary cylinder having the ring of the basket as its base and extending perpendicularly above the basket.

"Penalty—A goal shall be declared whether made or not."

The last clause of Rule 15, Section 14, Penalty (b) is to be stressed. This refers to the extra free throw awarded to a player who is fouled when not in the act of shooting. This extra free throw is to be awarded for any deliberate foul, such as one to prevent a player from getting into position to score, or one against a team mate of such player, or one committed for the purpose of getting the ball from opponents.

In high school games, five time-out

(Continued on page 41)

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JOHN L. GRIFFITH, Editor

Athletic Terms and Definitions

ONE of the difficulties inherent in the ever recurring problem of subsidizing college athletes relates to the different definitions regarding subsidizing. We have never known of a man, interested in college athletics, who was in favor of subsidizing, if subsidizing meant buying and selling college football players in the same way that players are sold and bought in the professional football league.

Some men, however, who would not favor the practice of selling or trading players are in favor of subsidizing them to the extent of paying them whatever salary is necessary.

Others favor the offering of certain financial inducements to high school athletes, but they are in favor of placing a salary limit on the amount to be paid for players.

Still others, who are not in favor of paying monthly salaries to players, think it is desirable for the colleges to pay the year's expenses of all athletes; such items as board, room, tuition, railroad fare, books, laundry and incidentals to be included in necessary expenses.

Others would draw the line farther down and they suggest that help offered athletes should be limited to the promise of a board and room job.

As it is difficult to find agreement among different men as regards what constitutes legitimate and illegitimate subsidizing, so also is it difficult to reach a universal understanding regarding desirable and undesirable recruiting methods.

One man may suggest, for instance, that a national agency be employed to list all of the high school athletes in the country. Such an agency would give each boy's athletic records, his age, weight, height, his scholastic standing and the like, and would sell these lists to such colleges as were interested in obtaining them.

Other men might consider this practice undesirable, but perhaps they might maintain that it is legitimate for each college athletic department to make up a card index of the good athletes in the home territory.

Others still might feel that this would be contrary to the ideals of the educational institutions, but would insist that it be considered legitimate for athletic coaches to travel about the country contacting high school graduates.

Some who think that the coaches and athletic directors should be restrained from direct recruiting activities hold that the alumni should be encouraged to attempt to persuade high school athletes to attend their respective institutions.

Finally, there are those who think that the initiative should come from the boys; in other words, that an institution should limit its activities to mailing catalogues and other descriptive literature. If a boy is interested in going to a certain university, then he might write to the head of the athletic department or one of the coaches and ask for information, in which case it would be considered legitimate to answer the boy's questions and even to go a stage farther and tell him something about the advantages that the college could offer.

This problem of illegitimate recruiting and subsidizing will probably never be solved, but it can be administered somewhat satisfactorily if the seventy or more college conferences each adopts its own definition of recruiting and subsidizing and if the competing institutions then will play the game according to whatever rules and agreements are adopted.

Is Football a Racket?

AN old friend of ours who writes a column in one of the leading newspapers of the country, a man who has always believed in college athletics and has for more than forty years fought a good fight for them, in a recent article calls attention to certain recruiting activities which may or may not be desirable and then concludes by calling college football a racket.

Our friend, according to our judgment, has made the same mistake that we all are prone to make at different times. We hear of some banker who speculated with depositors' money, and in a moment of passion we call banking in this country a racket and condemn all bankers alike. We hear of some employer who has made inordinate profits and has paid his employees a pitifully small wage, and from that we reason that all employers are unscrupulous, selfish, money grabbers. We witness politicians who one day advocate certain principles and then the next day, when party leaders have decided that it would not be politically expedient to follow these principles, advocate entirely opposite standards and principles. When we see such politicians, we are very apt to condemn all politicians in the same way that a great many people, noting what to them seem to be frailties of human nature in the matter of observing the niceties of competition, condemn athletics and perchance apply the term of racket to them. We have always insisted that there is more good than bad in amateur athletics. When we say that, we are thinking primarily of the amateur athletics that we know in the schools and colleges. Further, when we say that, we are not thinking of athletics as a system or an institution but rather of

the men who administer athletics in our educational institutions.

There can be no question that the majority of the bankers, doctors, lawyers, school teachers and coaches are innately honest. The majority of these men want to do that which is best for the common good. In short, there is more good than bad in America, and, specifically, there are more good men than bad administering school and college athletics in this country. Some good is accomplished by calling attention from time to time to the evils that exist, but the people who have made the greatest contribution to society are those who would hold fast to the good, who in attempting to save the world start with themselves and who believe that by expanding that which is good they will more effectively stamp out evil than will those who spend all of their time in trying to uproot the evil. As we have suggested before, when a playground is established in a district where juvenile crime is rampant, invariably it is found that the percentage of arrests of adolescents is decreased. Those who establish the playgrounds do so not with the idea primarily of uprooting evil in the district, but they do combat evil by giving the boys in the neighborhood something better to do than engaging in criminal activities.

We have no quarrel with those people who may believe that football is a racket. They are entitled to their own opinions, and if football is for the most part bad it will ultimately destroy itself. If football is a racket, then the majority of our football coaches are racketeers. After a lifetime acquaintance with football coaches in all parts of the country, we are very definitely of the opinion that these men, as a group, are as honest and upright as are the men who write sports, who teach school and who administer industrial enterprises.

Self-Reliance

THE Reverend Paul Austin Wolfe, pastor of the First Presbyterian Church, Evanston, Illinois, on April 4th of this year preached a sermon on self-reliance, in which he brought out a point that should be of interest to the men who are conducting the play activities of the youth of this country. We are taking the liberty of quoting a few paragraphs from that sermon.

"If I were interested in promoting a revolution in this country, the present attitude of youth and citizens and government would make me very happy. For this is the way violent revolutions are made. First, you make a people as discontented as you can. You tell them of their wretched past, of the unfairness of the nation in which they live, of how much it ought to give them and of how little it does give them. Then you teach them that anyone who offers employment exploits labor. You plant the seeds of distrust for management and newspapers and banks and industry. And, finally, you attack the courts of justice and tell the people that the one body for which they have always had high regard, the Supreme Court of the United States, is Public Enemy No. 1. And when you have completely undermined the confidence of the citizens in the system under which they live and created warring pressure groups within the system—when you have turned things into an uproar—then, be very sure of it, a carefully organized minority, a minority that knows what it is after and that believes in itself, will step in and take charge. That is how revolutions are made.

"A great many American people have said comfort and security are the goals of human life. In the last five years we have heard almost nothing about courage, independence and self-reliance from our leaders. On the contrary, we have been encouraged to take it easy, to believe that the good life is going to be provided for us; facing the hardships of life, we have been taught to say, 'We are not able.'

"We have taught our youth to say, 'We are not able.' Hardly a religious magazine comes to my desk which does not bewail the disability of youth and prophesy that 5,000,000 of our young people are doomed to lives of 'vocational frustration.' Newton Baker has told of a young man who wanted to spend the winter trapping just below the Arctic Circle. When Mr. Baker reminded him that the temperature there varied from 60 degrees to 80 degrees below zero, the boy said, 'I suppose you think I am crazy.' 'No,' said Mr. Baker, 'I wonder if I do not see the last survivor of the pioneers. . . . All the other young men who have come to see me have asked if I would help them to get the government to do something for them.' Youth has been taught to say, 'We are not able.' "

As Dr. Wolfe suggests, in recent years we have not heard enough about courage, independence and self-reliance — qualities that are developed and strengthened by the coaches in the educational institutions. Plans are desirable; systems are worth while; intelligent effort is a necessary concomitant of success, but, after all, plans, systems and even clear thinking are not enough. Courage and character must accompany these other things if a boy is to make a success of his life. The great majority of the young athletes in the schools and colleges know something about hardships. Many of them are on their own economically, and all are being taught that one must pay the price for victory. A champion will win under almost any kind of rules. He does not need to bribe the umpires and, above all, he has not been taught that in order to succeed it is necessary to make it impossible for others to succeed.

Athletic Journal Coupon System

THE coupon system inaugurated by THE ATHLETIC JOURNAL last December has been of convenience to both coaches and advertisers. Coaches should co-operate with advertisers by stating their official position when mailing coupons. Advertisers are glad to receive requests from our coach subscribers, but needless expense is involved when samples and catalogues are sent by advertisers to a chance reader who clips coupons merely to increase his volume of mail.

How Motion Pictures Help the Coach

By Edward Ruffa
San Diego Senior High School

MANY coaches in all parts of the country have used motion pictures of their athletes in action to help correct faults and improve performances. Most coaches believe that athletes who are able to see themselves or some other athlete in action on the screen improve more rapidly than do those with whom visual aids are not used. Classroom teachers have for many years used visual aids of all types to help in their teaching. Nearly all coaches feel that motion pictures have a very definite place in the athletic program, but not many studies have been made which furnish scientific evidence that supplements coaching opinion. Most of the studies previously made have employed only a very few subjects.

Just how effective motion pictures, and especially slow motion pictures, can be was proved by an experiment performed by the writer, using 110 boys and five track events. After having read a considerable amount of material on the subject and having talked with a great many people the writer found that the results of the experiment were approximately as expected. The motion picture group improved more than any other group and even more than was anticipated.

This work was done for a master's thesis and is reported here for what it may be worth to other coaches as an experiment in the use of films.

Technique of the Experiment

The simple comparison of an old method with a new was the basic technique used in this experiment. The technique needed for this experiment was one which would compare fairly and adequately the progress of pupils taught by the usual oral method now in vogue with a similar group of pupils taught by means of a moving picture unit of instruction. A third group of pupils with the same relative abilities as the other two groups was used as a test class, being given only the pre-tests and end-tests with no instruction or moving pictures. This third group, which showed improvement only by growth, was compared with the other two groups.

No instruction of the conventional type was given to the group with which the film was used, but any and all questions were answered. To the group with which the film was not used, regular instruction was given and all questions were answered.

The general procedure of the experiment was to select similar groups, give them all a pre-test, teach them for a certain period of time and then re-test.

IN meeting the requirements for a master's degree from Stanford University, Edward Ruffa made an exhaustive study on the use of motion pictures in coaching. He has condensed in this article the salient points of his study. Ruffa is at the present time Head Basketball Coach at the San Diego, California, Senior High School, from which he graduated in 1923. Four years later, he received a bachelor's degree from San Diego State College. Since making the study described here, Ruffa has successfully used motion pictures in teaching golf.

The following four questions were formulated: 1. Would similar units of teaching fundamentals for other track events be advisable? 2. Is group classroom teaching as used in this experiment a better means of motivation than group field teaching as used in the experiment? 3. Is a moving picture unit more efficient than the oral and demonstration method now used? 4. Are slow motion pictures feasible as a means of teaching certain athletic skills?

Preparing the Film

The five events chosen for the experiment were as follows: football throw, broad jump, shot put, high jump and 100-yard dash. Over 1200 feet of film were taken of these events in slow motion and at regular speed. Two cameras were used, set up close together, taking the same shot, one in slow motion, the other at regular speed. Later the two films were put together into two reels. The final film was over 900 feet long.

Edward Ruffa

The Shot Put Film

Each event was broken down into its fundamentals, and shots of these fundamentals were taken in sequence. For example, the shot put film is organized as follows: The first section of this film shows how the shot is placed in the throwing hand. Special attention is given to show that the shot is not held in the palm of the hand but in the fingers, so that the final wrist and finger snap may be obtained. The next section is a follow-up of the first; the shot is again placed in the proper position and the hand then revolved to show the position from all angles. From this is shown the position of the hand in relation to the shoulder preliminary to the throw. Then three full length shots of a standing put are shown. These are taken from the front, showing the body twist, wrist snap and follow-through of the arm.

These shots of a standing put are followed by two shots showing the same thing as above but with the reverse at the finish of the put. These illustrate very well the final footwork of the put; also, how balance is kept and the wrist and body snap is made.

Next are shown two views of the preliminary movements and the first hop across the ring, with the left arm and leg helping to carry the body across. Also shown is the final landing position at this half way point: the outstretched left arm, the body twist, to place the shot further back so there will be more swing to the shoulder and therefore more power to get distance, and the bent knees. The position half way across the ring is well shown.

The starting and finishing positions having been shown, it remains now to put these two together to show the continuous movements of an athlete making the put. Four shots are shown of complete puts from each of the following angles: front, rear, front side and rear side. With these the pictures of the shot put are finished.

Each event was filmed in this manner, from 200 to 300 feet of film being used for each event. From this description it may be seen that nothing was forgotten, and a boy viewing the pictures would know what

to do from start to finish in each one of the five events.

Setting Up Classifications

After the film was ready, we planned our action with regard to choosing the subjects of this experiment. Three groups of boys were used. One group was named the Visual Group, one the Non-Visual and the third the Test or Control Group. The Visual Group saw only the pictures, receiving no other instruction except in reply to questions asked by the pupils in the group. No demonstration or practice was staged for this group, but it was noted that a great many more boys of this group than of the other groups practiced on the events.

The Non-Visual Group received from the writer instruction as a group in all events. The same amount of time was spent in instructing the Non-Visual Group as was spent in showing pictures to the Visual Group.

The third group, called the Test Group, was in reality the Control Group of the experiment. This group was given the pre-tests at the same time as the others, but nothing further was done with it till the time arrived for the end-tests. This group was tested merely to show improvement by growth during the experiment.

Classifying the Subjects

Several problems arose which added to the difficulties. In the first place, a large number of boys was needed and they must be, as a group, as nearly alike as possible in regard to I. Q., height, age, weight, grade and athletic ability. The California Interscholastic Federation classification chart was employed. Through use of exponents for age, height, weight and grade, prospective subjects for the experiment were classified by this chart as A, B, C or D. Only such boys were used in the experiment as were classified as B by this chart. By this classification, all the boys used in the experiment were very similar as to age, height, weight and grade. Chart I shows the results of this classification and also the various group I. Q.'s.

The I. Q.'s for the various groups were as follows: Visual Group, 103.3 average, with a range of 67-126; Non-Visual Group, 102.2 average with a range of 80-126; Test Group, 101.4 average, with a range of 79-128. These three groups were practically the same with respect to I. Q. and this did away with any argument that one group was smarter and would therefore learn faster than another.

The groups were practically the same as far as age, height, weight, grade and I. Q. were concerned. But what about their athletic ability? There might be considerable difference, and, of course, if this were the case the experiment would prove nothing. To find the athletic abilities of the groups, a pre-test of the five events was given.

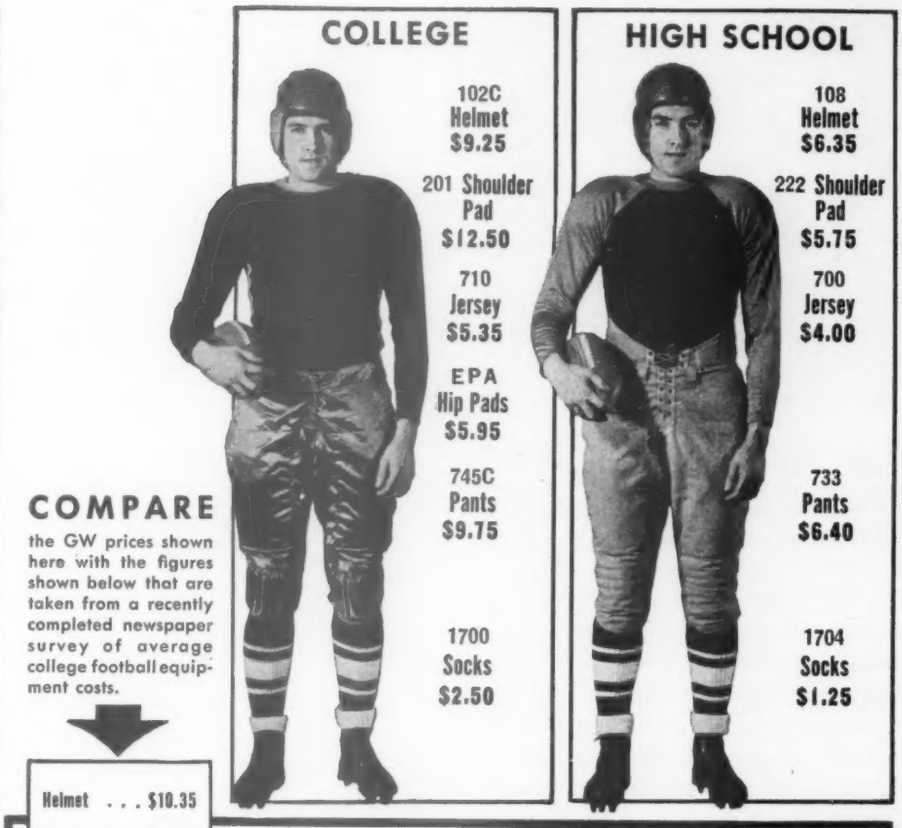

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Chart I
DATA ON THE SUBJECTS

Group	Number of Boys	Average Height	Average Weight	Average Grade	Average Age	Average Exponent	Average I. Q.
Visual	40	66.1 inches	124 pounds	10A	15.9	62	103.3
Non-Visual	40	66.7 inches	128 pounds	10A	15.8	62.5	102.2
Test	30	66.3 inches	125 pounds	10A	16.1	62.3	101.4

The above chart shows the average height, weight, grade, age, exponent and I. Q. of all three groups. No material difference as a group can be noticed.

Chart II
TOTAL POINTS SCORED IN THE PRE-TEST EVENTS BY EACH GROUP

Group	Number of Boys	Broad Jump	Shot Put	High Jump	Football Throw	100 Yd. Dash	Total Points
Visual	40	2,602	2,275	3,427	2,210	3,076	13,590
Non-Visual	40	2,645	2,140	3,296	2,209	3,299	13,589
Test	30	2,507	2,413	3,435	2,000	3,245	13,600

Note: The Test or Control Group totals have been figured on the basis of forty boys from the thirty scores available.

Chart III
TOTAL POINTS SCORED IN THE END-TEST EVENTS BY EACH GROUP

Group	Number of Pupils	Broad Jump	Shot Put	High Jump	Football Throw	100 Yd. Dash	Total Points
Visual	40	2,898	2,873	3,639	2,359	3,366	15,135
Non-Visual	40	2,772	2,636	3,487	2,310	3,375	14,580
Test	30	2,661	2,553	3,397	2,082	3,320	14,013

Note: The Test Group totals have been figured on a basis of forty boys from the thirty scores available.

San Diego High School, where the experiment was performed, gives each boy in school a decathlon test annually. Each boy is classified according to the California Interscholastic Federation classification chart into A, B, C and D groups and points from 1 to 100, depending upon performance in each event, are given. This chart was used in a like manner in this experiment.

In order to procure the subjects for use in the experiment, the writer asked gymnasium classes for volunteers. The Non-Visual Group was selected from the Period I class, in which there were fifty-one boys who were classified as B and who were willing to devote the time to participating in the experiment. Of the fifty-one boys who started in this group, forty-four finally finished. The Visual Group was selected from the Period II class. Fifty-three boys of this class started the experiment and forty-four finished.

From the Period III class was selected the Test Group. As this class was of limited size, only thirty-nine boys of B classification were found. Of these, thirty-three finished. Random selection was then made of forty boys in the Visual Group, forty in the Non-Visual Group and thirty in the Test Group.

Conducting the Experiment

The experiment now started with the three groups of boys taking the five events as the pre-test. Each boy was asked to do his very best at all times. Three tries were given in each event and the best mark counted. This procedure was carried on all through the test, marks being recorded and the best one placed on the final tally sheet.

In order to find the athletic abilities of the three groups from the pre-tests, the times, distances or heights of each boy's best marks were converted into points by use of the decathlon score chart referred to previously.

The total points of the boys were then added to give the total number of points scored by each group. This sum in the case of the Test Group was 13,600 points, of the Non-Visual Group it was 13,589 points and of the Visual Group it was 13,590, showing that the groups as a whole were of approximately the same athletic ability at the start of the experiment, which is as they should be, for one group could not be better athletically at the start than another group if the results of the experiment were to be valid. Chart II shows the total points scored in each event by each group in the pre-test.

For four weeks, one period of one hour a day for each group was used for giving the pre-tests. Each boy, being allowed three tries at each event, might use three days to finish any one particular event. For example, he might run the 100-yard dash each of the first three days and, after resting for a few minutes, throw the football once each day. Next, he might put

the shot the required number of times each day. The following week, he might start with the high jump, finish that event in two or three days and finish the week with the last event, the broad jump.

No hard and fast rule was followed as to when the boys were to do any certain event. As long as the instructor was present to measure and watch, the boys could perform in any event they wished. In this way, the boys performed each event when they wanted to, and interest was held at a higher level than if the boys were told to do this or that event on any certain day.

When the pre-tests were finished, instruction began for the Visual and Non-Visual Groups, while the Test Group was forgotten until the end-tests were given. Three one-hour periods per week for each group constituted the time spent in instruction and the showing of the pictures. This instruction period lasted for twelve weeks or thirty-six hours.

During this instruction period, each event was taken up separately with the Non-Visual subjects as a group. All the fundamentals were gone over and practice periods arranged. At the end of five weeks, when each event had been studied for one week, the events were again taken up and studied a second time for the same period of time. There were still two weeks left before the end-tests began, and this time was spent in having each boy go through each event before the class and having the class comment on his ability in each of the five events.

To the Visual Group, pictures were shown each day, the two reels requiring just about a class period to be run off. Many other moving picture reels were shown as supplementary material. The time spent in showing moving pictures to the boys in this group was equivalent to the time spent in giving instruction to the Non-Visual Group.

Testing for Results

At the completion of this instruction period, the end-tests were given in the same manner as the pre-tests, except that three weeks instead of four weeks were used for re-testing. A great deal of care was used in measuring and recording the results of each event.

Three tries were given and the best result recorded after each boy's name. Once again the decathlon score chart was used to convert into points each boy's best score in each of the five events. When this was done, the totals were added up and a comparison made of the pre-test and end-test scores. The end-test totals for all the five events showed 14,013 points for the Test Group, a gain of 413 points. The Non-Visual Group showed a gain of 591 points, having a total of 14,580 points. The Visual Group had 15,135, a gain of 1,545 points. Chart III shows the total

(Continued on page 30)

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(Right) Permanent Style Sternaman Cleat. Top View. No Metal Core in Either Model.

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Organic Development Explained for High School Track Teams

By Sam B. Goldberg
Haaren High School, Bronx, New York

NOW boys, two months have elapsed since we started to train for the indoor track season. How many recall the first practice session? You jogged around the track a few times, just limbering up. Truck and Joe felt great and wished to be timed for the 220. They did that 220 in 25.2 seconds—swell time for a couple of 22.8 men!

And do you remember how glad you all were that you had only to jog a half; and how stiff you were the next day? Your whole body, particularly your legs, seemed to ache. Emmett, do you recall the first 880 time trial you ran? The time wasn't bad, but you certainly looked tired in that last 220. When your legs got heavy and your lungs seemed on the verge of bursting, I heartlessly shouted, "Get going," as the other fellows yelled, "Come on, Emmett!" And how you came on! Where did that extra drive come from? I'll tell you a little secret which is known to all good physiologists and psychologists. Possibly you will understand why, at this stage of the game, you can run with almost no effort, in faster time, the same race that took so much out of you a month ago. The secret? Briefly: you are now a trained athlete, whereas before you were an athlete, but untrained.

You wish to know why you tired so easily at first? You know that you use up energy in running; that you perspire; that you feel fatigued. When body fuel is broken down in the cells, an acid, lactic acid, is formed; energy and heat are released; therefore, you perspire.

The Cause of Fatigue

Frequently you have wondered at my telling some one who seems to be "giving his all" during a race to ease up, relax. Often you have been surprised to learn that your time for a certain event has been better when you strode through at a fair pace than when you kept the pressure on all the way. The explanation for this is not very difficult. Since fatigue poisons are manufactured while the muscles are in a contracted or tense state, the toxins of the tense athlete are not given time to be dissipated but rapidly accumulate to impair the efficiency of the muscles. While you are striding through, the muscles are under less tension. And when you are in good condition, the fatigue poisons are eliminated much more rapidly than when you are not, thus permitting a greater efficiency in the use of the mucles.

What is it, Joe? You'd like to know more about this? All right! Here is what happens: The contracting muscle transforms body sugar, glycogen, into glucose; thence into lactic acid, most of which is retained in the cell. This process results in the release of energy. Part of the lactic acid is thrown into the blood stream, causing a lowering of the alkalinity of the blood. When the body cannot throw off, neutralize or resynthesize the lactic acid rapidly, fatigue sets in. The better the athlete is trained, the higher the rate of resynthesis or reconversion of lactic acid to body sugar. In a few moments I will tell you how this reconversion takes place.

Unless we had some check or buffer to neutralize or reconvert this lactic acid, the poison would wipe us out. However, nature is good to us and provides us with alkaline substances, such as sodium bicarbonate, which are resident in the body, and oxygen. You chemistry students realize that when an acid and an alkali meet, neutralization takes place, to some extent. So, within the body, the lactic acid ($HC_3H_5O_2$) meets the sodium bicarbonate ($NaHCO_3$), resulting in the formation of carbonic acid and a weakly alkaline lactate. The carbonic acid breaks down into carbon dioxide and water.

The Blood Stream

Thus, we see that the lactic acid which causes fatigue is taken care of in three ways: some is lost through the release of energy (broken down completely into simple forms such as water and carbon dioxide); some is resynthesized back to glucose; and some is buffered by the sodium bicarbonate. This reconversion of lactic acid to glucose and then to glycogen cannot take place unless oxygen is present. The more energy used, the more lactic acid produced, the greater the amount of oxygen needed, the faster the circulation of the blood. See how this cycle goes! Always keep in mind that this entire process of conversion and reconversion takes place in the individual cells.

The oxygen is brought to the cells, by way of the blood stream in the red blood corpuscles, which exchange the oxygen for carbon dioxide at the cells; while at the lungs the carbon dioxide is given off in exchange for the oxygen. Might we not, therefore, assume that the more oxygen brought into the body the more energy will be available.

Now, to pull things together a bit, let's find answers to three important questions asked before. Fatigue is the accumulation of waste products. The stiff and aching muscles are a result of too much waste

product in the region of greatest energy release. Please note that you do not feel stiff until the following day, for while you are exercising the circulation is increased, but when you are resting the circulation is decreased considerably and cannot remove the wastes fast enough. Frequently, the oxygen is used up faster than it can be supplied by the blood, and a debt is created.

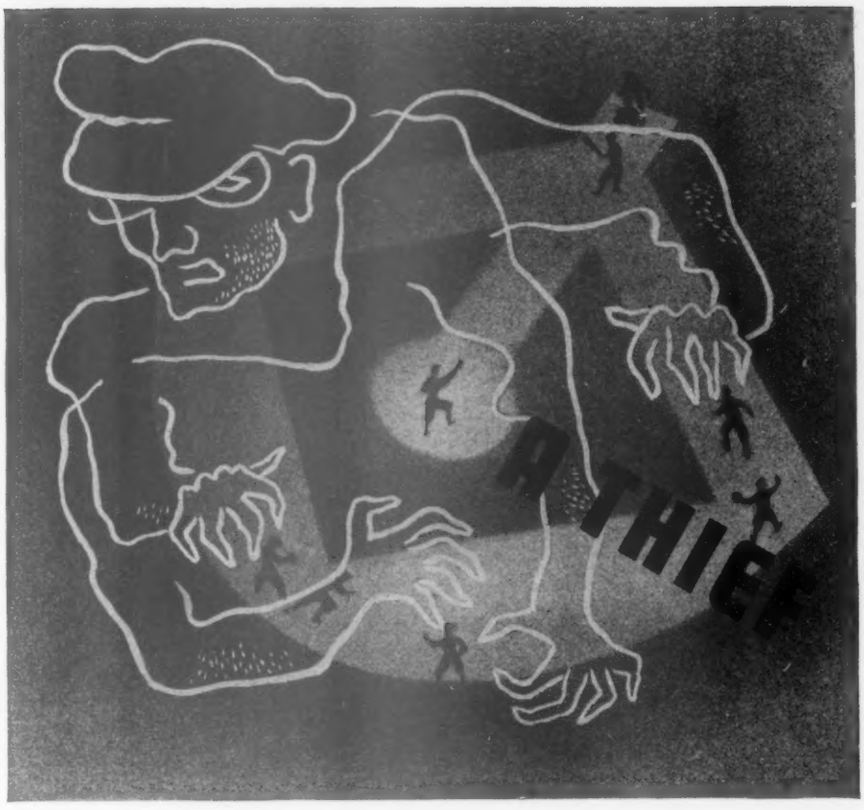
The Function of Training

The following proved facts will explain why a trained athlete can maintain a greater sustained effort than the untrained man. The trained athlete has a greater cell capacity for oxygen and a more efficient reconversion of lactic acid to glycogen; he has a more efficient process of manufacturing the red blood corpuscles (produced in the heads of large bones) which carry the oxygen to the cells and take the carbon dioxide away; he has more capillaries enlarged, leading to a greater number of cells being supplied with more food and oxygen; he has a larger amount of blood delivered per beat, thus accounting for greater efficiency and a slower heart rate.

THIS article is a recapitulation of a talk given to the 1936 track team of Haaron High School, Bronx, New York, by Sam B. Goldberg, who coached this team. Because it explains in simple language many of the questions often found in the minds of young track atheletes, it is reproduced here. Coaches may find that athletes under their supervision will benefit from a reading of this article. The high school team to which this talk was originally given placed fourth in the American Sprint Relay Championship at the 1936 Penn Relays and on the following day won the American and Canadian One-Mile Interscholastic Championship. Coach Goldberg is President of the Manhattan High School Athletic Association.

Let us pause for a moment at this point to examine perfunctorily this pump, the heart, which never ceases its work, except when death occurs. If we divide the heart beat into two parts, the stroke and the glide (much the same as in an oarsman rowing), we can set up a ratio of two units of time for the stroke to three units of time for the glide or rest. It is during this rest period that the heart must be ready for the next action. Therefore, in the case of all sustained action, the greater the efficiency, the lower the base heart rate, the fewer strokes required, the more blood delivered, the more glide or rest.

Let us jump back to the extra drive that you can produce when you believe you are all in. This is possible because of the secretion of adrenalin into the blood stream, brought on by excitement. This adrenalin seems to release, immediately, blood sugar to be used in creating energy; it also causes a contraction of the spleen, forcing into the blood stream red blood corpuscles



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with oxygen to help reconvert lactic acid; lastly, it seems to neutralize the fatigue products at the most crucial point, the nerve muscle ending.

The second wind of distance runners may be similiarly explained. It seems that when an oxygen debt has created a terrific pain, the body exerts a gigantic effort to equalize the debt. Finally, large quantities of blood containing red blood corpuscles are dumped from the spleen. When this occurs, the fatigue toxins are dissipated, and the runner continues smoothly once more. However, Dr. Hill, a famous English physiologist, does not agree with this theory. He believes that the accumulation of fatigue poisons numbs the nerves, and the runner then continues mechanically. Judging by the way some of you run, I'm inclined to believe that Dr. Hill is right.

Other ways in which the trained athlete is more proficient than the untrained are in the larger and tougher muscle fibers and quicker adjustment of the body to external changes.

Perhaps we should explain that power can be built up only when there is an absence of strain resulting from worry, when the body's strength is not drained by disease germs, and when the athlete observes reasonable health habits.

Need I point out a more vivid example of organic development than that of Harry*, who, although stricken with infantile paralysis when a youngster, has built up a splendid body and through constant practice and training was a runner-up in the interscholastic hurdles championships last year?

*This boy recovered the use of his body with the exception of his left arm, which was atrophied.

A Basketball Training Program for Junior High School Boys

By Virgil J. Noble

South Intermediate School, Saginaw, Michigan

JUNIOR high school basketball coaches are faced with an entirely different situation than are senior high school and college mentors, because new material must be molded from boys unfamiliar with the game. Many boys entering the sixth grade have never before attended a basketball game or handled a ball.

The plan we adopted for arousing basketball enthusiasm among approximately 500 boys in our school was derived from the tactics used by the late Knute Rockne of the University of Notre Dame. In order to build tradition, create a desire to play and insure plenty of candidates each year, a system such as his was inaugurated.

Gymnasium and Home Room

The first step seemed plainly indicated. Since it would be useless to talk basketball until every boy had been given a taste of actual experience, it seemed practical to introduce the game through the medium of our gymnasium classes. First lessons were made extremely simple, with frequent interruptions of play for analysis and explanation of arising problems. The boys actually learned by playing and no boy's attempts were too crude to bar him from competition. The essence of all this preliminary training was the development of basketball consciousness. Every boy in school learned that there was good fun in basketball.

Step number two in furthering this scheme of basketball saw the small beginning. The program initiated in gym classes had to be kept moving; the sequence must be unbroken if it was to be productive. Organization began in home rooms at this point. Our school had thirty-five home rooms which were divided into four leagues of sixth, seventh, eighth and ninth grades. Competition was here introduced. Games were played during the noon hour, and ribbons awarded the three leading teams in each grade at the end of the season. Two seasons were necessary because of mid-semester promotions: the first from November 15 to January 30, the second from February 1 to March 15. Competition in these leagues was fairly even. Beginners always played each other, and seventh, eighth and ninth grade boys were always opposed by others having the same game experience.

Team Organizations

Gymnasium class work with its follow-through program in home room organization had produced most gratifying results. The experiment for the deliberate building up of basketball interest and enthusiasm had definitely succeeded. This young army was getting the "feel" of the thing and advancing, somewhat jerkily, perhaps, but none the less surely in knowledge and technique. Native ability was every day coming to light and calling for new direction. So on about December 1 a general call was issued for all boys interested to attend the first meeting of what we call our "flyweights" and "midgets." No credentials were necessary save desire to play or to learn more about the game. These meetings were open to all students regardless of ability and at no time was any

squad cut. They continued throughout the winter on an average of three times a week. Former students were pressed into service as assistant directors.

All beginners (sixth graders) were put on the flyweight squads, and seventh grade boys on the midgets. Each division contained seven or eight boys. In these groups an attempt was made to organize boys having a common background—the same home room or neighborhood. An endeavor was always made to maintain in each group a common level of mental ability and approximate size. These precautions were taken in order to insure group solidarity over at least the two-year period in which basketball enthusiasm on the part of many boys was the objective, rather than intensive individual drill. Assistant coaches, themselves under constant supervision, taught these groups basket shooting, pivoting and preliminary defensive and offensive measures. Each session ended in a short scrimmage. As flyweights progressed they were advanced to the midget group. Interest was further stimulated by games with church, Scout troop or city teams. These games were secured by a note in a local daily newspaper, which never failed to bring a quick response. At that time our local Y.M.C.A. conducted a Saturday league for small boys. This is now supplemented by a similar league led by W.P.A. workers. These leagues furnish additional opportunity for experience.

Probably there is no coach in the world who has not experienced the disappointments incident to players' stage fright, even with a team of more than average ability. A certain insidious shyness and often a very real terror has to be overcome before audience stimulation can begin to get in very telling effects. First appearances before an audience are therefore dreaded ordeals.

An occasional gleam of the spotlight during this preliminary training proved most

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WHILE a student at Southeastern High School of Detroit, Michigan, Virgil J. Noble was named all-state forward in 1922 and 1924. Since graduating from Michigan State Normal College at Ypsilanti in 1928, he has coached in the schools of Saginaw, Michigan. "Basketball," he writes, "is not just a sport to be pulled off the shelf in December and put to bed in March. A definite plan of procedure must be set up and followed throughout the school year. Boys must be given time to absorb the countless details that go to make up a basketball player. Movements such as feinting, dribbling, shooting, pivoting, snap-passing and breaking must be brought past the mechanical stage before the competitive play begins. Most of this instruction in our school takes place in an informal way before and after gymnasium classes, during noon hours and on rainy days during the soccer and baseball seasons."

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effective in the development of assurance and poise. The most advanced flyweight and midget groups were always invited to play a six-minute quarter between halves of regular school games. As we play two school games, four of these groups had opportunity for play on home dates and one group was taken each time we played away from home. Thus, the gymnasium of every team in the Intercity League was visited, and the midgets were permitted to warm up on the side baskets and shoot a few baskets between halves. As the players were not under tension of actual competition, these experiences were just fun, while all unconsciously the boys were familiarizing themselves with the gymnasiums of their own opponents of the next year and becoming acquainted with crowd reaction. When the time came for them to represent the school, no stage fright was apparent.

Results of the Program

The fourth and final step of our training system had now been reached. These boys had entered the 8B grade—had received approximately two years of training and were ready to try out to represent the school in a varsity sport either as lightweights or heavyweights. Here the basketball paths of the midgets divided and actual competing teams were organized. After a try-out, those players showing most ability were invited to compete with holdovers from the last year's squad. These try-outs were thorough, and boys who seemed ready were asked to continue with the holdovers. The less proficient players were returned to the midgets for more work, but only until they showed promise, at which time they were immediately promoted back to interschool squads. To qualify for the lightweights, boys were required to be under 64 inches tall and under fifteen years of age before the first game of the season. If a boy became fifteen years of age before the first game was played he was allowed to finish the season as a lightweight. All boys over 64 inches in height, regardless of age, and those fifteen or over before the first game of the season were requested to try out for the heavyweights.

This process of patient training over a period of two years has proved a phenomenal success. Every boy in the school has been brought within its scope, and a variety of athletic talent has been uncovered. In contrast with the old "annual call" through which bewildered coaches attempted vainly to separate all the chaff in a week's time, the new method has made a most creditable showing. All the tension of getting the machine into gear has disappeared. There has been smoothness of performance and increased efficiency far in excess of our most optimistic hopes.

Unusual Happenings in Sport

By O. E. Dahlquist

A CRAVING for the unusual has gradually materialized into somewhat of a hobby in the form of a collection of several hundred odd incidents that have occurred in the various branches of sport. They have been gathered over a period of fifteen or twenty years from the vantage point of player, official and spectator, as well as in the exchange of locker room chatter.

Like most forgetful humans, I could relate but a few incidents and then only if properly prompted, but the spark for the actual compiling of these queer happenings burst into flame when Captain Roy Riegels of the University of California on January 1st, 1929, shifted himself into reverse gear for a distance of 75 yards after picking up a football fumbled by "Stumpy" Thomason of Georgia Tech. We all remember how Riegels was tackled on his own one foot line by his team mate, Benny Lom. The blocked kick and the safety score of two big points which followed, as well as the final score of 8 to 7 in favor of Georgia Tech, are common knowledge. This freak play, occurring in an important intersectional game, was naturally front page news, but the unsung oddities happening in the wide-open spaces are often buried and forgotten at their place of birth.

In checking over most of the peculiar incidents that I have recorded, I find that "Old Lady Luck," our good friend or enemy (depending upon which side of the fence we happen to be), has put in several potent licks. I can also find glaring examples of good and bad judgment, courage, speed and skill present in practically every situation.

Football

Knowledge of the football rules coupled with quick thinking and speed enabled Augustana College, Rock Island, Illinois, to score a touchdown against Monmouth College in a Little Nineteen Conference game played on Ericson Field, Rock Island, in 1930. Monmouth punted to Augustana. Bucher, Monmouth guard, going down fast under the kick, secured possession of the ball after it had bounced around a few times and very mechanically touched it down. "Bus" Thoman, Augustana halfback and a ten-second man in track, standing behind Bucher, demanded, "Gimme the ball!" Bucher, no doubt thinking that the ball was dead and that one of the officials was asking for it, picked

it up and passed it to Thoman. "Bus" was off like a flash with the ball tucked safely away and, before the dumbfounded Bucher or anyone else could realize what had happened, he had scored six points for Augustana. The referee rightly had not blown his whistle killing the ball when Bucher had downed it, and, consequently, the score was allowed.

Another football story involving speed, a story which could possibly be classified under the title "There is Many a Slip 'Twixt Cup and Lip" occurred in a game played between Freeport and Rockford High Schools at Rockford, Illinois, in 1929. Freeport, in attempting a punt, was caught completely flat-footed when Leo Campisi, speedy little Rockford guard, broke through the line and, like a streak of greased lightning, snatched the ball after it had left the kicker's hands, but before it had reached his foot, and raced unmolested for a touchdown.

FOR many years, O. E. Dahlquist has been collecting amusing and unusual anecdotes centered around the various sports. Some of them he relates here. A former athlete, Mr. Dahlquist is now Executive Secretary of the Rockford Boys Club of Rockford, Illinois. He is also a football official, having worked in a number of Western Conference games.

An incident somewhat similar to that which occurred in the Princeton-Dartmouth game of 1935, in which a spectator believing that added defensive strength was needed substituted himself into the game, took place in a contest between Mt. Carroll and Aquin (Freeport) High Schools on October 26th, 1935. A Mt. Carroll halfback broke loose and was racing down the field for what appeared to be a certain touchdown, when a spectator, a former Aquin player, dashed on to the gridiron and tackled the runner. Whether or not this unorthodox play had any bearing on the final outcome, the records show that Mt. Carroll was defeated, 7 to 0.

Basketball

Ralph "Aja" Johnson, popular football and basketball official, relates a story in which one of the players in a basketball game used his head both literally and figuratively, much to the dismay of his team mates. The story concerns a basketball game played in a county tournament at Manchester, Iowa, in 1932. Team A was leading by the score of 16 to 15 with less than ten seconds to go. A jump ball was called near the opponents' basket. On the jump, the player of team A, seeing one of his team mates behind him and thinking to retain possession of the ball for the few seconds remaining in the game, signaled to his team mate. As the ball was tipped backward, the team mate, frantically trying to grab the ball, allowed

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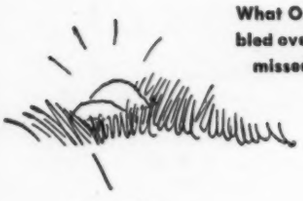
PLAYER'S LIFE

Homer missed the Texas Leaguer



What Oscar stumbled over when he missed the fly

Waldo got his leg full of spikes at third

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it to hit his head with such force that the ball bounced through the opponents' basket just as the gun sounded ending the game. As a result, team A was beaten, 17 to 16.

Had Don Clemer, Cornell College basketball substitute, known and practiced the Boy Scout motto, "Be Prepared," he could have avoided considerable embarrassment. In a game between Knox College of Galesburg, Illinois, at Galesburg in 1926, Cornell was leading Knox by a comfortable margin. With about four minutes left to play, the Cornell coach ordered Don Clemer to report to the scorer. Hurriedly pulling off his sweat shirt and sweat pants, Don properly reported to the scorers and started out on the floor to report to the referee. This gentleman was on the opposite side of the floor, but at about the time Don reached the center circle he heard considerable laughter from the audience. Trying to find a solution for this outburst, Don discovered that he was fully dressed for basketball except for his pants. After the game, Don's explanation for his state of undress was the fact that he believed one pair of pants, meaning the sweat pants, was sufficient for sitting on the bench.

A basketball center's "dream" was realized by Ralph Blake, playing center in a Y.M.C.A. intramural championship game at Springfield, Illinois, on March 3rd, 1936. Blake caged a basket from the center tip-off. The distance from the center circle to the basket on this particular court was over thirty feet.

Baseball

Refuting the statement that in baseball the umpire is always right, and that once his decision is made it cannot be changed, is a decision made by Umpire "Ducky" Holmes in a game in the Three-I League between Moline and Rockford at Moline in 1919. Rockford had a runner on third base named Strong. The batter hit a ground ball to the second baseman, and Strong started for the plate. Jake Dufel, Moline catcher, was standing on the plate all set to take the throw from his second baseman. The ball was a little late in arriving, and, as Strong slid across the plate, Umpire Holmes called him safe. After the decision, Dufel, standing in the same position as that he was in when the play was made, complained loudly to the umpire and, pointing to his enormous size 12 shoes that were completely covering the plate, asked Holmes how the runner could possibly have touched any part of the rubber. Umpire Holmes scratched his head and remarked, "By golly, Jake, you're right! The runner is out." Arthur Lundahl, secretary of the Rockford club, immediately wanted to know what the trouble was, and, upon rushing out to the plate and seeing the humor in the situation, had not the heart to carry on the argument, thus helping to defy tradition by letting the reversed decision stand.

How Motion Pictures Help the Coach

(Continued from page 23)

points scored by each group in each event in the end-test. This should be compared with Chart II.

Some boys improved more than did others in the end-tests. The Non-Visual Group showed an improvement of 24.78 points per boy in the end-tests over the pre-tests. The Visual Group showed the greatest point improvement, scoring an increase of 38.62 points per boy, while the Test or Control Group showed an improvement of 10.30 points per boy. Chart IV shows the average improvement per boy in the three groups as shown by an increase in the end-test scores over the pre-test scores.

The forty boys in the Visual Group scored an average of 339.75 points per boy

Chart IV

TABLE SHOWING EACH BOY'S TOTAL AVERAGE POINT INCREASE OF END-TEST OVER PRE-TEST

Group	Number of Pupils	Pre-Test	End-Test	Average Point Increase
Visual	40	339.75	378.37	38.62
Non-Visual	40	339.72	364.50	24.78
Test	30	340.00	350.30	10.30

Chart V

PER CENT INCREASE OF END-TESTS OVER PRE-TESTS—ALL EVENTS AND ALL GROUPS

Group	Number of Pupils	Broad Jump	Shot Put	High Jump	Football Throw	100 Yd. Dash	Total Per Cent Gain
Visual	40	11.4	26.3	6.2	6.7	9.4	11.4
Non-Visual	40	5.0	23.2	5.8	4.6	3.0	7.5
Test	30	6.2	5.8	—1.1	3.8	2.3	3.0

in the five events of the pre-test. In the end-tests they averaged 378.37 points or an average increase of 38.62 points per boy over the pre-test scores.

Chart V shows the percentage gain of end-test over pre-test in each event.

Results of this experiment indicated conclusively the positive value of using film to teach certain athletic skills. The film employed was constructed particularly for use in this experiment. It was a great help in presenting the desired material. It is evident that the use of films would more than likely be of great benefit in many other track events, as well as other athletic sports.

Address for June

AMONG the articles scheduled for the June issue is one on distance running by L. W. Olds of Michigan Normal College. To avoid any possibility of missing this issue, subscribers should notify the subscription department at once of any contemplated change of address for June 1, stating whether or not this address is for June only.

Contest for Coaches

FOR the best articles on the subject, "My Athletic Department Budget and How I Balanced It," the ATHLETIC JOURNAL offers six cash prizes.

Length of article—500 to 1500 words.

First prize, $10.00; Second prize, $5.00; in each of the following three classes:

Class A—Coaches in high or preparatory schools having a total enrollment of 100 or less.

Class B—Coaches in high or preparatory schools having a total enrollment of more than 100 and not more than 500.

Class C—Coaches in high or preparatory schools having an enrollment of more than 500.

Entries to be considered must bear a postmark not later than May 15, 1937. Each contestant must be at present a member of the athletic staff of a high or preparatory school.

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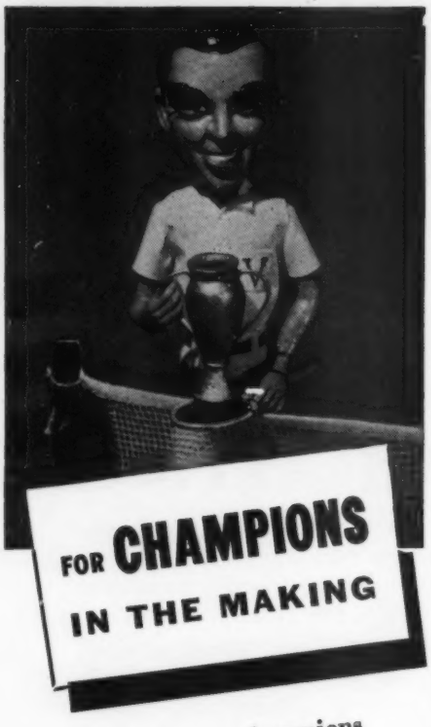

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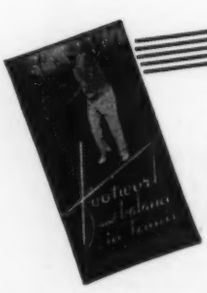

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The Advantages of Net Play in Tennis

By John Kraft, Jr.

SINCE graduating from college four years ago, where he participated in both singles and doubles play, John Kraft, Jr., has played in various tennis tournaments in Mississippi, Tennessee and Arkansas.

FROM a game of powered drives of depth and forcefulness, tennis has developed into a much faster sport of accuracy and angles. The day of the successful base-liner is passing. Laurels of modern tennis are won at the net.

Compared to the man of forecourt play, the base-liner had little to learn. Strength, endurance and consistency were his salient possessions. A lob, perhaps an occasional chop stroke, comprised his repertoire of deception.

Advantages of Net Play

In the wake of the first forcing drive, the wizardry of modern tennis advances to the net. Here the possibilities are boundless. The stop volley, overhead smash, drop shot and center-court drive may be employed with splendid results. Forecourt play, which is 80 per cent offensive, forces the base-liner to a less favorable and defensive section of the court.

The lob and passing shot provide the back-court player with his only recognized offensives. However, the speed and accuracy required of a successful passing shot make the execution of such a stroke fraught with the possibilities of error. And, of course, there is always a potential return by the farsighted netman.

With the lob, further difficulties are presented to the netman. Lobbing requires less accuracy and power in the player using it than does the passing shot and, too, may force the advanced player from his enviable position at the net. The aggressor must therefore be ever alert, ready to retreat to any part of the court to which the ball may descend. Compelled to abandon his net position, he should give his overhead shot sufficient depth to force his opponent into another lob, with the object of returning to the net and making a placement of his retrieve should the overhead fail to accomplish the desired results.

Strokes for Net Play

Since the net game is an aggressive offensive movement, balls played in the advanced court should be hit decisively and not merely kept in play. By standing close to the net, a player is able to reduce his number of errors and obtain a maximum range of angles to all parts of the court.

There are times, however, when the ball cannot be played from the net offensively. One of these occasions occurs when the advancing player, not having reached the net, is caught several feet away by an opponent whose heavily topped drives skim the net cord with balls that must necessarily be returned with the racket head in a position below the cord. In a circumstance like this, the netman cannot volley the return with any degree of power and must, therefore, rely upon placement following his retrieve close to the net where he can make his returns with greater force and likewise select the proper and most effective angles.

It is advisable to angle balls played from the net as sharply as possible. In contacting the ball, the netman should strive to keep his body at a right angle to the net, and, when the speed of the play renders the pivot impossible, the shoulder and hip should aid in the stroke, for the power from these two sources will greatly abet the success of the placement.

Except, of course, in the case of the lob, balls met at the net should be blocked and not stroked. The block may be sharp, severe or slight, as the occasion may suggest. Orthodox stroking, requiring the use of the back-swing and follow-through, would occupy much more time than could reasonably be devoted to the return. The block volley with its short, deceptive movement solves our problem.

Developing the Net Game

There are times when it is not possible to angle a ball in just the manner we like, and our return must inevitably fall within our opponent's range. By a study of court angles, we find that a man standing in the ready position, in the center and a few feet to the rear of the base line, has his possible number of returns reduced to a minimum when he is forced to retrieve a ball that drops directly before him. For that reason, I recommend the center court return.

In summarizing our analysis of forecourt play, we may say that the advance to the net should be in the wake of a deep forcing shot which will hasten the opponent's return and necessitate a defensive retrieve. For greater use of angles, a player should endeavor to move close to the net; returns from that position should be made as decisively as possible. In coping with shoestring volleys, it is essential for the player to keep his body behind the ball. If it is necessary to hit deep, he should employ the center-court theory.

There are many players who imagine that they cannot possibly acquire a good net game. Unless their sight is very poor or they are in some other way physically handicapped, they can. Some players are gifted with greater talent and aptitude than others; their individual sense of timing may be better—but any ordinary person *can* develop a good net game!

Teaching Batting and Bunting

(Continued from page 15)

One of the major faults of batters is the inability to follow the ball all the way to the bat. A good hitter watches the ball leave the pitcher's hand and follows it until there is actual contact with the bat. He tries to meet the ball squarely and out in front, and he does not overswing. He chooses good balls and does not swing at high, low or wide balls. Even good balls are hard to hit.

Willie Keeler, the greatest place hitter in baseball, says: "Hit them where they ain't." Good hitters are often able to place a ball where they want it, provided the ball is pitched properly. The young player may practice hitting inside and outside balls through infield openings, and if this can be done with accuracy he may try it in a game. To place a ball, the batter should move in the direction of the ball and meet it, using more of a shove stroke than a swing. He should not guess at a pitch, but watch the ball.

Bad Habits of Batters

Lack of confidence.
Poor balance and lack of co-ordination.
Overstriding.
Lunging at the ball.
Picking up the front foot instead of shifting it in striding.
Keeping the arms and elbows in close to the body.
Stepping away from the batter's box or into the "bucket."
Not meeting the ball out in front.
Keeping the bat too far back on the shoulder and not being ready to hit.
Using too tight a grip.
Swinging at bad balls.
Using a poorly balanced bat.
Swinging too hard.
Not watching the ball.
Not picking a "strong" ball to hit.
Not swinging parallel to the ground.
Letting the end of the bat drop.

Importance of Bunting

Bunting is an effective weapon in college and high school baseball. It is easier to develop a fair bunting team than it is to build up a defense against it. One man does the bunting while it takes the whole team to defend against it. College and high school teams are not skilled enough

Paul Waner

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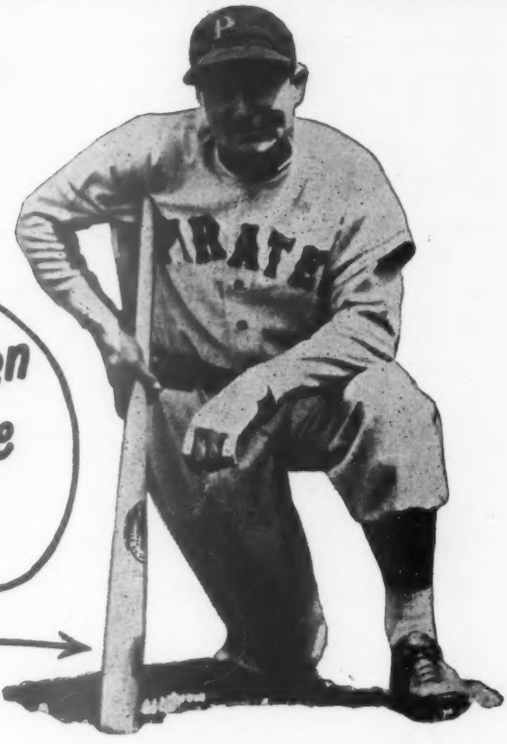

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in fundamentals to play the ball without making many costly errors.

Bunting as a great offensive weapon is again coming into its own in league ball. In the last few years, it has been a lost art, but with the advent of the less lively ball it seems to be regaining its place in the game.

There are three distinct types of bunts: the sacrifice, the push and the shove. On a sacrifice bunt, the batter makes sure he puts the ball down properly, giving himself up and advancing the base runner. The quick bunt for a hit is used when the infield is out of position and a well placed ball will go where it is hard to field. The drag and push bunts are used for hits. If the batter is right handed, a push bunt is used and if left handed the drag bunt is used. These bunts might be placed through any opening in the infield but are usually placed out of reach of the pitcher and between the first and second baseman.

Technique of Bunting

On a sacrifice bunt, the batter should shift his feet and be facing the pitcher as the ball is about to leave the pitcher's hand. He should balance on the balls of his feet, leaning slightly forward. His feet should be nearly even with each other and in a natural position. Keeping his elbows out from the body but not flexed, the player should hold the bat parallel with the ground and out in front within his vision. Gripping the bat loosely, he should hold one hand at the bottom of the bat and place the other out on the bat as if catching the ball, keeping the fingers of the latter hand behind the bat, so as not to bruise them. He must not swing the bat into the ball, nor pull it away from the ball, but let the force of it against the bat, which is held by a loose grip, deaden the ball. He should be sure to lay the ball down before making any effort toward first base. The start is worthless unless the bunt is successful. The batter should practice starting the instant the bunt drops.

The batter should pivot on the balls of the feet the instant the pitcher starts his delivery. He should move into a bunting position, bringing the bat over even with his shoulders. This has a tendency to keep the ball on the ground, while coming from under tends to make the ball pop into the air. The batter should move the body up or down with the bat extended, instead of moving the bat; this tends to keep the bat in line with the vision.

Sacrifice bunts are placed down either the first or third base line. With a man on first and second and with no one out, the third baseman should be made to field the ball, which pulls him away from third base. Push and drag bunts are to be used by clever bunters only. The ball should be pushed past the pitcher and first baseman, or pitcher and third baseman. The batter may try to draw infielders out of position and then place the ball through the infield.

Faults of Bunters

Holding the bat too tightly.
Swinging at the ball.
Stepping back.
Not facing the pitcher.
Bunting at high and bad balls.
Flexing the body.
Getting started before bunting the ball.
Using the wrong position of the hands.
Not keeping the bat parallel with the ground.
Not having the bat out in front.

The Development and Training of Broad Jumpers

(Continued from page 9)

check marks. The wise broad jumper experiments with his known distance checks in his preliminary trials before the event starts and thus is sure of himself when competition actually begins. Many of the best jumps are and should be made early in the competition. The preliminary trials are, therefore, very important.

The Take-off

The length of the take-off run varies with jumpers from 100 to 130 feet. But, long or short, the run should be of gradually increasing speed until the jump is made—the greater the speed attained, the better the chances of a long jump. To gain unusual height, native spring is needed, but certain leg and body movements on the last two strides are found helpful for those athletes who do not gain height naturally. The body weight and balance must be so placed as to give the jumper a chance to drive upward with a terrific leg reaction. A shortening of the last two strides, together with landing flat-footed on the last step before the jump, makes for a settling of the body weight; the momentum previously attained then carries the body weight slightly ahead of the point where it is when the athlete is in normal running position, thus giving the proper body balance for this upward and forward drive off the board.

In addition to this upward leg drive and simultaneous with it, there should be a decided throwing upward of the arms and the forward leg. Pictures of outstanding jumpers in action often clearly show this unusual outstretched arm action and upward throw of the front leg, knee first, at the start of the jump. There are, of course, jumpers who do not use this form. These are usually athletes who depend much on a "treading the foot" action

in flight. These men usually do not attain the height of the other type jumpers.

Flight and Landing

The jumping foot during the flight is brought up to and a little beyond the opposite knee. Some jumpers carry this position throughout the flight with little or no leg or body action until the feet are shot out at the finish, but a sort of "air-running" stride or "hitch-kicking" action is considered by many jumpers and coaches as helpful in maintaining body balance and in adding distance. As gravity gets the better of the height and body momentum, both feet of the jumper should be extended as far forward in the pit as possible but not so far that on alighting the athlete will fall back into the pit. Ordinarily the excessive momentum of the jumper will carry the body forward over the feet. Unless the reaching out is stressed, the feet (or one at least) are apt to drag and hit ground before the maximum distance is attained.

Many jumpers have to be watched on placement of the feet. Some cannot keep their heels together on alighting. This is desirable but not necessary. However, both feet should be placed forward equally to give the jumper the full benefit of the distance cleared. Six or eight inches of actual distance may be lost through carelessness in this detail. At the moment of contact in the pit, a throw back of the arms will also aid in propelling the body onward over the feet and keep the jumper from falling backward after landing.

Practice

The kind and amount of practice a broad jumper should take will depend on whether he participates in this event as a specialty or as an extra event. If he is first a sprinter and jumps only as an extra event, then his first consideration will be his sprinting development. The development of a practically perfect stride and take-off will be stressed more than actual jumping, because the last has a tendency to jar the muscles of a sprinter. Probably because of this lack of actual jumping practice, the athlete will not become so proficient as a jumper as he would be if he practiced more at this event, but his asset to the team as a point winner may be greater if he participates in both sprinting and jumping. The amount of work for the specialist varies with the time of the season. As the season progresses into the competitive period there is a letting up on hard work so as to conserve spring and eagerness for the day of the meets.

In the conditioning period of the season (very early season) the broad jumper should work at the same type of practice as all other track men: plenty of jogging to develop leg strength and endurance, body twisting and stretching exercises to strengthen and loosen up all muscles of the body. Since speed is a prime factor in

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his success, the jumper should, as soon as the weather allows, work on increasing his speed and rhythmic striding.

Springing from the jumping foot both to develop strength and stamina is indicated, and maintaining body balance in the air after gaining extra heights should be stressed.

Later in the Season

The developmental period of the season which follows the conditioning period and precedes the competitive phase calls for considerable actual jumping. This period should see the hardest work on the part of the athlete. Every other day, if the weather is good, is not too much for actual jumping, provided the effect of the previous day's work has worn off. It is impossible to set any ironclad routine, as each man reacts differently to work. If the athlete feels no sore spots and his legs are relaxed from the previous jumping, no harm is apt to come from a repetition of the work on alternate days, but, if there is soreness and tenseness, lighter work is indicated.

Twice a week when meets are being held is enough for actual jumping and in the latter part of the competitive season jumping may be cut to once a week. However, each day should see much time spent on sprinting, springing in the air and checking the take-off run.

Attention to recognized methods may develop better jumpers, but methods without candidates who have native speed and spring cannot bring records. Broad jumpers are born more often than developed.

The Baseball Coach's Practice Session Talks

(Continued from page 16)

D. Breaking up the squeeze.
E. Breaking up the delayed steal.
F. Co-ordination of infield and outfield on fly balls.

XIV. Duties of baseline coaches.

XV. Double plays possible.
A. With man on third only.
B. With man on second only.
C. On trapped fly bunt.
D. On trapped short fly to outfield.

Practice Session Talk on Batting

Following is a sample practice session talk on topic V of the outline. This includes the subtopics as well.

"I have two definite theories about batting. Both apply directly to the bat itself and the use of it. The first has to do with the reason for swinging the bat in a horizontal plane for all pitches whenever possible. The diagram shows that

Diagram showing batting surface of average bat.

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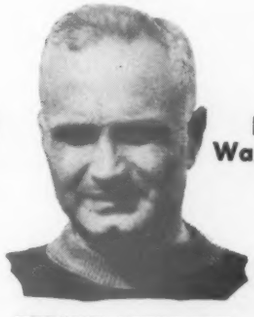

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you usually have about forty-two square inches of batting surface on your bat. The horizontal swing makes full use of this surface.

"If the bat is swung in a horizontal plane that coincides with the line of flight of the pitched ball, there is a chance of contact between the bat and the ball for every part of the forty-two square inches. If the bat is not swung in a horizontal plane, there is less chance of connecting with the ball. There may be as little as two and one half linear inches of possibility—approximately the width of the bat.

"The horizontal swing gives the full length of the bat's hitting surface as a possibility for meeting the curving ball, provided, of course, your timing is accurate. In the uppercutting swing, if even the heavy end of the bat crosses the line of flight of the ball, there is less than three inches of possibility of contact, and the bat must be exactly on time or the ball is not met at all.

"The second theory is related to your control of the bat. Your bat is a very delicate piece of equipment. Your grasp of it controls the balance of it. The position of your hands on the handle affects the heavy or hitting end and controls the course of the bat in its swing as it meets the ball. If you are hitting the ball 'on the nose' and it is riding back to where it came from with a low trajectory, your hand position and the weight of your bat are just right. But if you are popping up fly balls that are easy put-outs or are driving the ball into the ground, your grasp needs to be changed or your bat changed. By moving your grasp slightly up the handle, you may find that you will hit the ball more nearly on a line, especially if you have been hitting flies. If you have been topping the ball, by lengthening the bat or using a slightly heavier bat, you may begin to hit the ball 'on the nose.' A batter who uses the same bat for practice hitting and game hitting is following a good procedure. He becomes accustomed to this bat, and if he does a little thinking he can become a consistent hitter.

"Here is what I am looking for in your hitting practice. I want you to hit only at good balls. I want you to drive them back at the pitcher and I want them to be on a line, not high in the air. Why do I want them to be on a line and back at the pitcher? I have this reasoning as a basis. If you can time your swing to meet the ball out in front and can drive it down through the pitching box or within a radius of ten feet of it during batting practice when the ball is thrown for you to hit, you have a wide range of chances of making real hits in a game when meeting real pitching. In other words, you have from the center strip to either base line to correct your timing of pitches.

"If you are right-handed and late in swinging, you still may drive the ball between second and first or over first. If you are ahead of time, you may pull the ball to short third or left field. If you are left-handed you will do just the opposite. If the pitch is an inside ball, you probably will pull it to your side of the diamond. If it is an outside ball, you may place it on the side opposite you.

"In case you have been pulling hits to left field or right field all the time in batting practice, you have cut down your chances of getting a hit if your timing is too fast. You will be getting fouls where you might have got hits if your practice hitting had been down the center. Of course, you will have a wider space for chance hits if your timing is slow, but it will not balance the advantage of the hitting down the center. Do I make this clear to you? Let me hear your questions.

H. S. DeGroat

"What are we expecting from our batting order? We need a lead-off hitter who has confidence and who can wait out the starting pitcher or who can smack the ball if that becomes necessary. Last season, our captain filled that place. He got on base eight out of ten times in the last seven games. He led off just about twice as many times as any other player. Number one batter usually does just that.

"For second batter, we want someone who can bunt, because we may wish to go after our runs one at a time in some games. We need a hitter and I should say that we want a heady one, too; one who can work the pitcher in the hole so that we can try a hit-and-run play once in a while if our number one man gets on.

"For third batter, we need a dependable hitter. Last season we were fortunate in having a man who was dependable. He was successful twenty-one times out of thirty-six times with men on bases. What do I mean by successful? Well, I mean that the batter hit to score the runner or move him along, or he hit the ball into

an error, or he drew a walk if the pitcher couldn't put the ball over the plate.

"For clean-up man, we want a hard hitter, but not a Casey. We do not want some one who is so set on himself that he thinks that all he need do is to swing at a ball and it will be a hit. We need a dangerous hitter; one who will worry the pitcher if men are on bases; one who can smack the ball if it is good. If we have a player who can be cool enough to wait for the ball he likes, we are lucky.

"For the rest of the list we want the best hitters we can find. We want dependable hitters. Any hitter who can come through 50 per cent of the time with men on bases is an asset and deserves to move up in the list. You are considered successful if you get on the base by a hit, by a walk, by being hit with a pitch or by hitting into an error. If your fly scores a man, you are still all right. If you are put out or cause a fielder's choice, you fail.

"I want every man to be able to bunt—not just numbers one, two and nine. Just as sure as you cannot bunt, just so sure are you to come up this season when a bunt is most needed to put us ahead.

"I expect to know exactly what you do in each game. Your batting average doesn't mean a thing to me if you fail to hit, walk or force an error when men are on base. I will know how good you are as a lead-off hitter; whether you are first on base and start rallies; whether you are the leader in scoring, stealing bases, batting in runs, or our leading walker or strike-out king."

The Dependable Batter and Signals

The next few paragraphs constitute a sample practice session talk on topic VI of the outline.

"Yesterday I discussed the batting order and I referred to the dependable batter. One test of the dependable hitter is the record of what he does at bat with runners on the bases. If he can be successful more than half the time, he can be considered dependable. Records show that he can be successful more than half the time and yet need not be a .300 hitter. Our most dependable batter last season either got a hit, hit into an error or drew a walk with men on base twenty-one times out of thirty-six trials. His batting average was .291. He was leading scorer, leading walker and leading base stealer. This is a record hard to beat. Can it be equaled this season?

"Another test of the dependable batter is his attitude. He can be depended upon do his best and to do the proper thing when he has taken or given a signal. If the hit-and-run signal is coming up, this batter works to get the pitcher in the hole. Once he has given or taken the signal, he carries out the program it calls for. He knows the value of doing his part. He is a team man. Even if the

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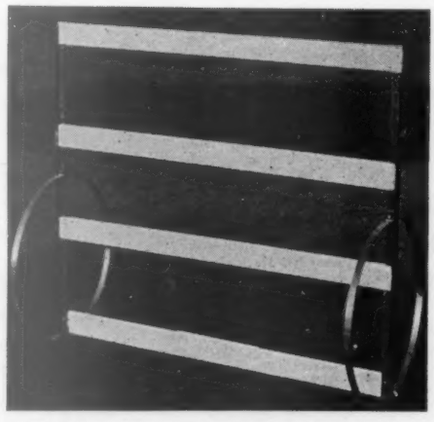

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The staff of instruction will include: Director Fetzer, Raymond Wolf, John Vaught, W. F. Lange, Walter D. Skidmore, P. H. Quinlan, Bunn Hearn, M. Z. Ronman, M. D. Ranson, and John Morriss.

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ball is a bad one, he swings and tries to place that ball where it should go. He forgets himself and thinks only of carrying out his part of the contract.

"If he is a thinking batter, he will take advantage of every break that comes his way. There is nothing I like better than to see a hitter who is thinking. I like to see a hitter flash a warning signal to the runner on first if he is likely to take a cut at the next pitch. He prepares that runner. This is team work.

"The dependable batter knows how to bunt. He can pick the first good pitch, if necessary, and lay it down so that the runner can advance. This is his first duty. Getting on base himself is secondary. What we are after is dependable hitters. So think about dependability in batting. We will find which of you is the most dependable as the season goes along."

Running the Bases

Topic X of the outline is covered by the following sample practice session talk.

"Base running is one of the baseball skills that is hardest for players to learn. It is often difficult for the coach to arrange for giving players practice and experience in this skill. Experience on the base paths is necessary if you are to become real base runners. You must be so accustomed to being on the paths that you have lost all the excitement that causes you to become overnervous. The more quickly you become at home on the base lines and can take advantage of every mistake of the defense, the sooner you will measure up to the ideal of a real baseball player.

"When do you become a base runner? You become a base runner as soon as you leave the batter's box. What should you do first? You should look for the white chalk line and head for first base at top speed. Do not watch the ball. The track man or swimmer who looks to the side does not win his race. Neither will you as a base runner attain your full speed if you watch the ball. Run down the outside edge of the base line and beat out that ball. The coach will signal you what to do.

"Where do I want you to stand off first base? I want you in the base line, not behind the base line. You will establish your own confidence if you find just how far you can be safely off that base with a right-handed or left-handed pitcher in the box. You should know whether you can run back to the base faster than you can slide in if the pitcher throws. Some men are faster if they slide in. Some are faster if they don't slide.

"If you expect to steal, you should plan to get a good start. Without that start, I don't want you to leave for second. You will be a sure out. You should know your regular distance and try to take a little more if you plan to steal.

"Which foot should you move first? You should take a comfortable stance so that you can get started on either foot with the greatest speed. If you move the right foot first in going back to first base, you are correct. This means a crossover step. The opposite foot should be moved first if you start for second. If you move the near foot first and then the far foot you will make two moves and not cover as much ground as you would had you used the crossover at once.

"Where do I want you off second base? The correct distance from second varies with different individuals. I want you to know your exact distance so that you can return safely to second if the pitcher turns to throw. I don't care whether the shortstop or the second baseman is standing on the base. You should go back to second only if the pitcher turns to throw. This means that you have to watch only the pitcher. It means that you will be moving up the base line when the pitch is made. It means that you are moving in the right direction if the ball is dropped by the catcher, or a hit comes. It means that you are not going the wrong way when the pitch is made. It means that you have confidence in yourself and are not nervous from being unsure of yourself. Remember that a runner on second usually scores on any single. Being on second is almost as good as being on third base. Third base is seldom stolen in close games. I prefer to have you going in the right direction on the pitch.

"If you don't know your right distance off second, you will find yourself very nervous, running back every time the baseman makes a motion toward the base, and throwing your weight the wrong way at the wrong time. Confidence on the base lines comes only by being sure of yourself.

"Now, when you are at third base, on each pitch I want you to move up on foul territory. Return on fair territory. Why move up on foul territory? Two reasons: (1) So that you will not be called out if struck with a fair hit ball; (2) So that you will not be caught between bases if you dodge the ball and the third baseman then snares it. I can give you an example of a case in which this advice was disregarded. Our captain of one season stood inside the base lines. He dodged a hard hit ball and was caught between bases. The runner on second came up and stood on third, as he should have done. The captain managed to slide safely back to third, but was touched as he slid in to the base. The baseman who had tagged him immediately reached over and tagged the runner from second. The umpire called 'Out!' referring to the runner from second. Our captain, whose back was turned to all this, thought he was called out; so he stood up and stepped off the base, only to be touched and called out. This all resulted from his not standing on foul territory.

"I like plenty of action in a runner on third base. Fake starts toward home help to affect the opposing pitcher and infield-

ers. The fact that the runner on third base is wide awake to take advantage of every break may mean the winning or tying run.

"Just bear in mind that you are not a real ball player unless you can be at home on the bases. You can counteract your fine fielding and hitting ability by being a dud on the base lines. A fine base runner is a pleasure to see. We can give you only a few chances to find yourself. You must think out the various situations you encounter and make yourself a creditable base runner.

"I repeat that it is very difficult to give base runners experience in this skill. Your opportunities in practice may not be many. Learn by your mistakes. Think and develop yourself."

The Basketball Rules for 1937-38

(Continued from page 17)

periods are to be allowed to each team, and in case of tie games only two overtime periods are to be permitted, the second overtime becoming a "sudden death" period. There will be a five-minute intermission in such games between the end of the fourth quarter and the first overtime period, during which intermission the teams may leave the court.

The bouncing reaction of the ball is to be specified in the rules. Balls must be tested for this reaction at the factory, and the air pressure which will give this reaction must be stamped on the ball. The pressure for game use must be as stamped.

An addition to Rule 8, Section 8, Note, will be made for the purpose of covering the various situations which arise when a player with the ball is standing on the division line or is straddling the division line. There has been some misunderstanding as to such a player's right to pivot from one of these positions. Most of the misunderstanding has arisen in interpretation meetings or in other discussions of the rules, rather than in games, but, if this particular case is definitely covered, there will still be material for those who like to argue and probe into the borderline situations.

When held ball occurs less than six feet from a side line, the ball is to be moved in so that the jump takes place not less than six feet from that side line. If held ball takes place on or inside of the restraining circle at center, it is to be tossed up at the center.

Rule 11, dealing with time-out, is to be entirely rewritten for the purpose of clarification, but there will be only slight changes in its provisions. Many other slight changes will be made in wording but these will have little or no effect beyond clarifying the meaning of the sections concerned.

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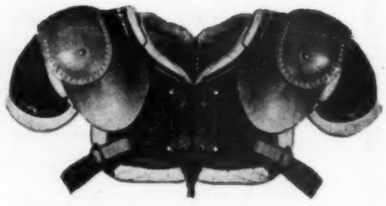

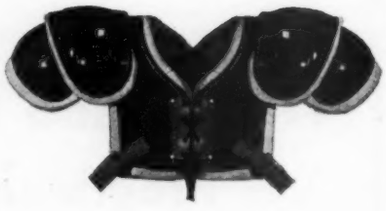

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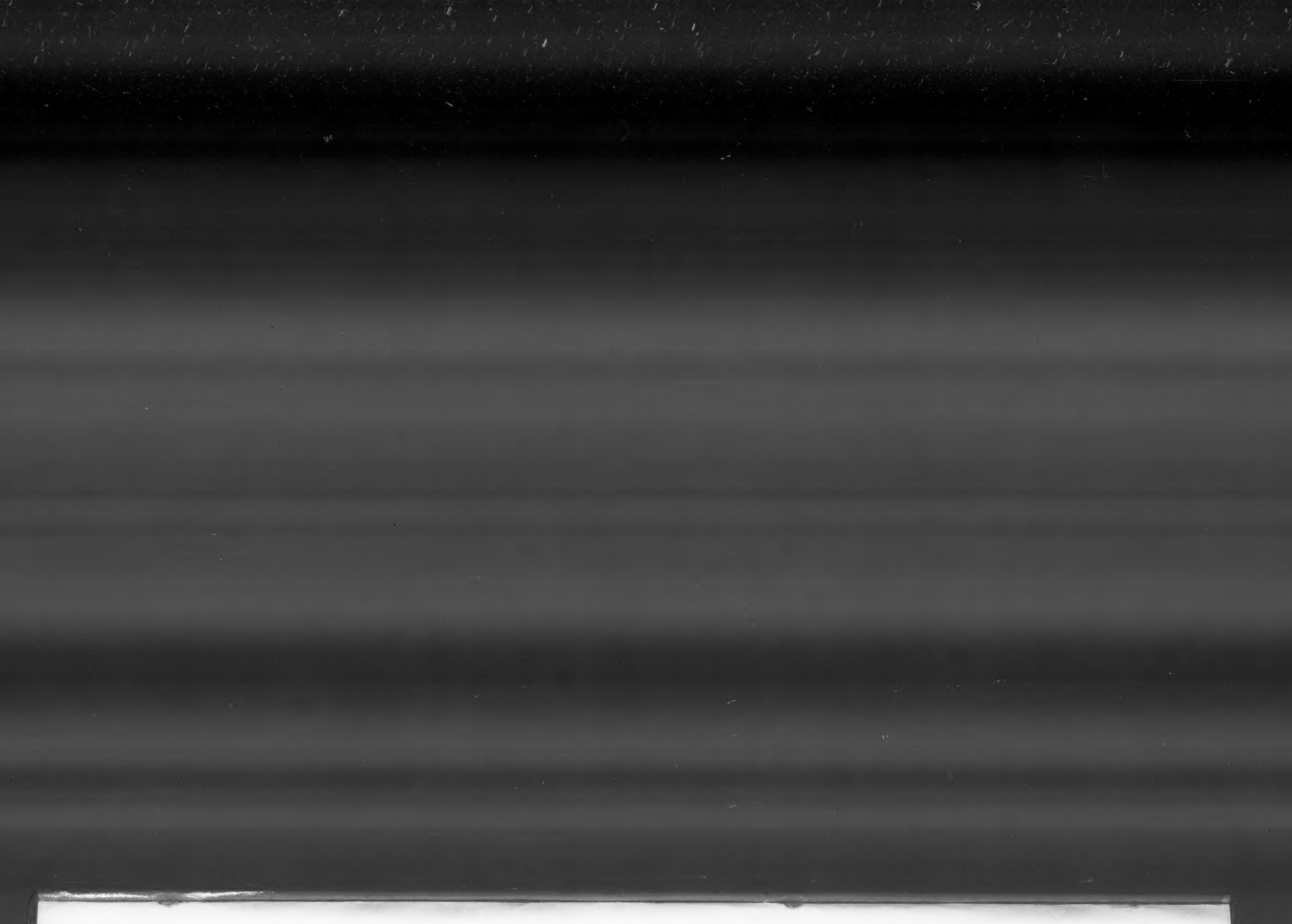

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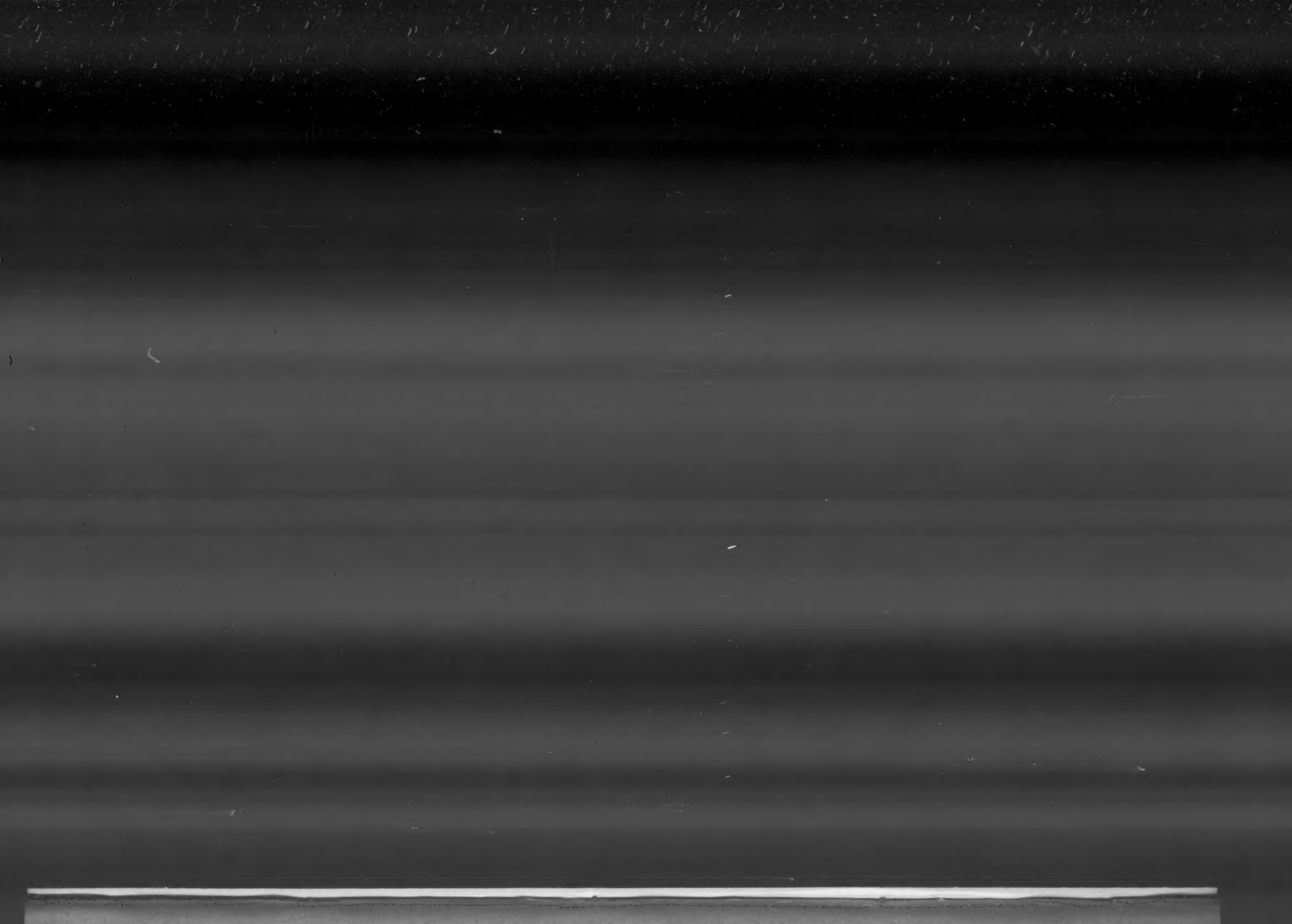

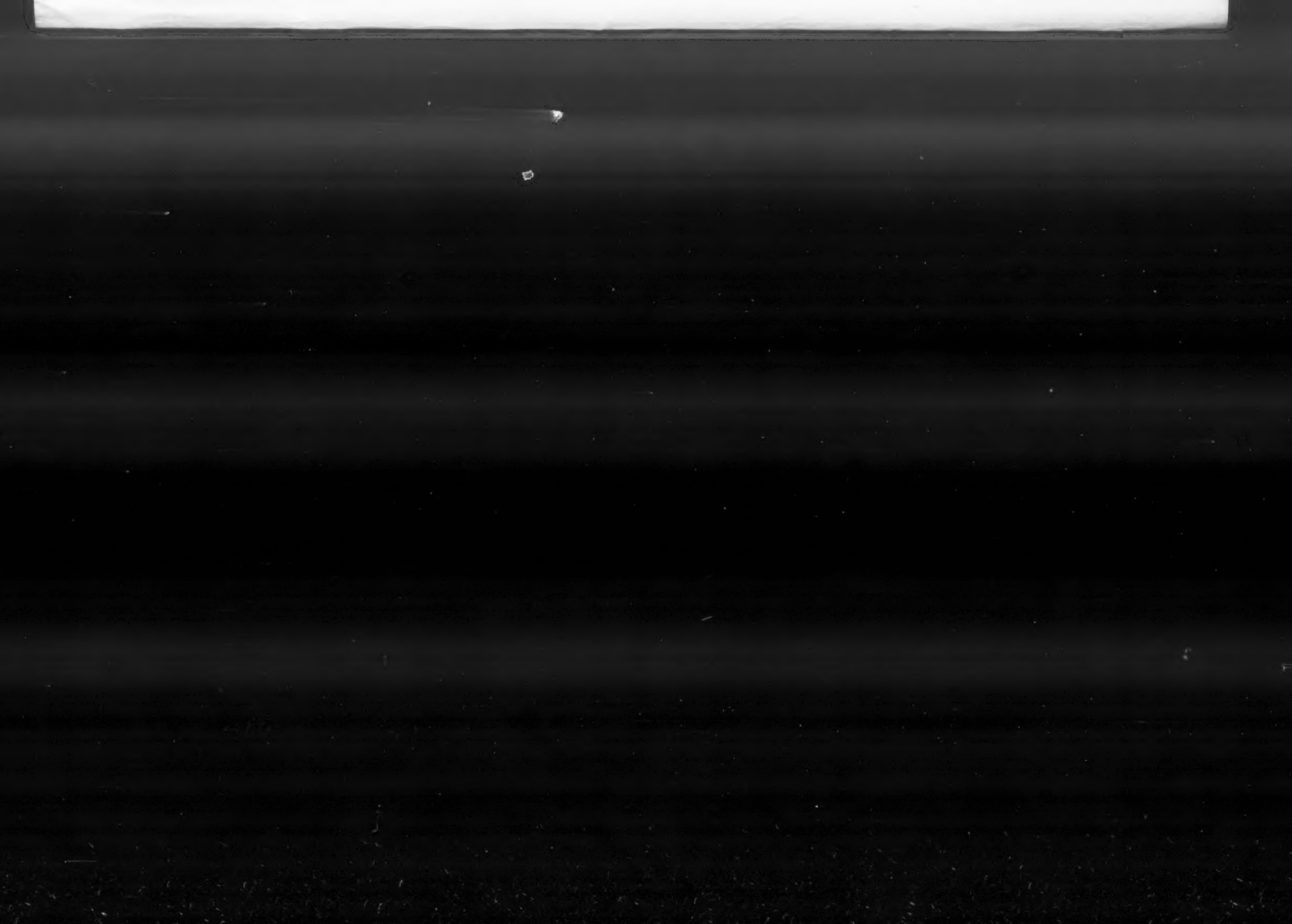

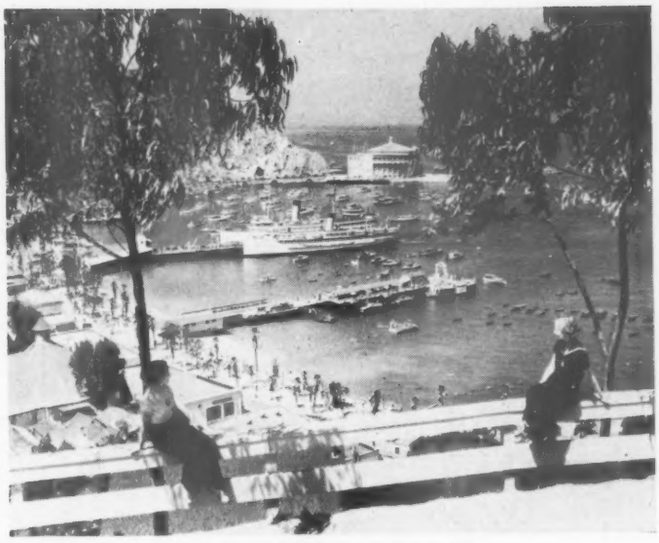

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SPOT-BILT *"Perfected"* CLEAT ATTACHMENT

ONE REASON WHY MOST COACHES SAY— "SPOT-BILT"

The cleat attachment is the backbone of a football shoe! The Spot-Bilt attachment is simple, foolproof and troubleproof. Without qualification, it is the best attachment in use today. It consists of only two parts—a bolt and washer—that are riveted into one unit. Learn why it gives the dependable service, comfort and safety that coaches expect from Spot-Bilt shoes.

THE SPOT-BILT ATTACHMENT HAS MANY ADVANTAGES

The Spot-Bilt attachment is rustproof because it is cadmium plated. It is practically impossible for the attachment to turn in the sole because of the fluted bolt shaft and notched washer design. As a result Spot-Bilt cleats can always be unscrewed. There is no nut to loosen, consequently the bolt cannot back up in the sole and injure the foot. All parts of the attachment are exposed—it can be repaired without taking the shoe apart. The Spot-Bilt attachment reduces breakage to the absolute minimum. It is so securely anchored in the steel plate and riveted under such terrific pressure that it cannot develop the side play that leads to breakage. A stripped or worn Spot-Bilt bolt can be replaced in two minutes' average time.

THERE ARE SIX STEPS IN THE ASSEMBLY OF THE SPOT-BILT ATTACHMENT

1 Step (1) illustrated in photograph shows the position of the spring steel plate in the sole of a SPOT-BILT shoe. SPOT-BILT plates are solid high carbon spring steel. The tap and heel of every SPOT-BILT football shoe is reinforced with spring steel plates.

2 When the shoe enters the cleating room the proper position of the cleats is marked on the sole by means of a steel template. Holes are then drilled completely through the sole and steel plate. The holes are drilled 4/1000 of an inch smaller than the maximum diameter of the bolt shaft.

3 Step (3) illustrated shows the bolt inserted from the inside. The shaft of the bolt is fluted as shown at right and the flutings cut their own teeth in the steel plate as the bolt is forced through under pressure. This positive engagement prevents the bolt from turning in the sole.

STEEL PLATES

BOLT AND WASHER

4 Step (4) shows the washer in place. The notched center hole of the washer engages the bolt flutings and the four teeth around the rim engage the sole. This provides further insurance against the bolt turning. SPOT-BILT bolts will not turn—consequently you can always unscrew a SPOT-BILT cleat.

5 Step (5) is the riveting operation by which the SPOT-BILT attachment is permanently attached to the sole of the shoe. The fluted portion of the bolt protruding above the washer is riveted down over the washer under 2200 lbs. pressure which practically compresses the parts into one unit.

6 The final step (6) is the screwing on of the desired style of cleat. All SPOT-BILT cleats have a steel nut embedded in them, which nut engages the threaded portion of the bolt when the cleat is attached.

SPOT-BILT ATHLETIC SHOES

Witchell-Sheill Co., 1635 Augusta Blvd., Chicago, Illinois

SINCE 1898—ATHLETIC SHOE SPECIALISTS